

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
July 2014

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 30717

Name: Downing Nelson Oil Co., Inc.

Address 1: PO Box 1019

Address 2: \_\_\_\_\_

City: Hays State: KS Zip: 67601 + \_\_\_\_\_

Contact Person: Ron Nelson

Phone: (785) 621-2610

CONTRACTOR: License # 31548

Name: Discovery Drilling Co., Inc.

Wellsite Geologist: Marc Downing

Purchaser: Coffeyville Resources

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

<u>05/09/2017</u>	<u>05/15/2017</u>	<u>06/22/2017</u>
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 195-23,020-00-00

Spot Description: \_\_\_\_\_

NW SE NW SE Sec. 14 Twp. 13 S. R. 21  East  West

1,785 Feet from  North /  South Line of Section

1,829 Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: Trego

Lease Name: Hall Well #: 2-14

Field Name: Homberg South

Producing Formation: Arbuckle

Elevation: Ground: 2189 Kelly Bushing: 2197

Total Vertical Depth: 3976 Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: 221 Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: 1543 Feet

If Alternate II completion, cement circulated from: 1543

feet depth to: 0 w/ 150 sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: 39,000 ppm Fluid volume: 320 bbls

Dewatering method used: Evaporation

Location of fluid disposal if hauled offsite: \_\_\_\_\_

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

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WICHITA, KS

INSTRUCTIONS: The original form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. If confidentiality is requested and approved, side two of this form will be held confidential for a period of 2 years. Rules 82-3-130, 82-3-106 and 82-3-107 apply. Drill Stem Test, Cement Tickets and Geological Well Report must be attached.

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: Michael Merri

Title: Office Manager Date: 09/26/2017

KCC Office Use ONLY

- Confidentiality Requested
- Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: KJR Date: 10-10-2017

Operator Name: Downing Nelson Oil Co., Inc. Lease Name: Hall Well #: 2-14  
 Sec. 14 Twp. 13 S. R. 21  East  West County: Trego

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to [kcc-well-logs@kcc.ks.gov](mailto:kcc-well-logs@kcc.ks.gov). Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken  Yes  No  
 (Attach Additional Sheets)

Samples Sent to Geological Survey  Yes  No

Cores Taken  Yes  No

Electric Log Run  Yes  No

List All E. Logs Run:  
 Micro, Compensated Density Neutron, Dual Induction

<input checked="" type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Name	Top	Datum
Top Anhydrite	1560'	+645
Base Anhydrite	1597'	+600
Topeka	3230'	-1033
Heebner	3458'	-1261
Toronto	3479'	-1282
LKC	3494'	-1298
BKC	3738'	-3737

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface Pipe	12.25	8.625	23	221	Common	150	2% Gel & 3% CC
Production Casing	7.875	5.5	14	3969	EA2	150	

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No (If No, skip questions 2 and 3)

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No (If No, skip question 3)

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No (If No, fill out Page Three of the ACO-1)

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
4	3864'-3866'		

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TUBING RECORD: Size: 2.375 Set At: 3914' Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. 06/22/2017

Producing Method:  Flowing  Pumping  Gas Lift  Other (Explain) \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	28	0	0		

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease (If vented, Submit ACO-18.)	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled (Submit ACO-5)	PRODUCTION INTERVAL: _____ _____
--	---	--

Downing Nelson Oil Co., Inc.

PO Box 1019

Hays, KS 67601

**Lease** Hall #2-14

**API #** 15-195-23020-00-00

**County:** Trego **State:** Kansas

<b>Formation</b>	<b>Log Tops</b>	<b>Datum</b>
Top Anhydrite	1552'	+645
Base Anhydrite	1597'	+600
Topeka	3230'	-1033
Heebner	3458'	-1261
Toronto	3479'	-1282
LKC	3495'	-1298
BKC	3737'	-1540
Marmaton	3805'	-1609
Arbuckle	3861'	-1664

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CONSERVATION DIVISION  
WICHITA, KS

# SWIFT Services, Inc.

DATE	PAGE NO.
5-9-17	1

CUSTOMER <b>Downing - Nelson Oil Co</b>	WELL NO. <b>2-14</b>	LEASE <b>HALL</b>	JOB TYPE <b>8 5/8" SURFACE</b>	TICKET NO. <b>30060</b>
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CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2230							ON LOCATION
								TD-222 SET# 221
								TP-221 8 5/8" # 23
								15' CEMENT LEFT IN CASING
	0055							BREAK CIRCULATION
	0115	5	36.3		✓	100		MAX CEMENT - 150 SKS STANDARD 2% GEL, 3% OCC
	0125	6 1/2	0		✓	150		DISPLACE CEMENT
	0127		13 1/4					CEMENT DISPLACED - SHUT IN
								CIRCULATED 15 SKS CEMENT TO BIT
								WASH TRUCK
	0200							JOB COMPLETE
								THANK YOU WAYNE, JON H., ISAAC

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 OCT 10 2017  
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 WICHITA, KS

# SWIFT Services, Inc.

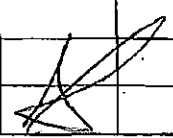
DATE  
5-16-17

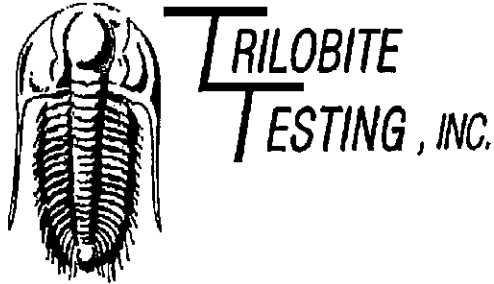
PAGE NO.

CUSTOMER: *Souning & Nelson*      WELL NO.: *2-14*      LEASE: *Hall*      JOB TYPE: *2 stage*      TICKET NO.: *30034*

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T.	C.	TUBING	CASING	
	<i>230</i>							<i>On location</i>
								<i>RTD - 3976</i>
								<i>Pipe - 3969'</i>
								<i>Centralizers - 1, 5, 8, 10, 12, 14, 60</i>
								<i>Bracket - 61</i>
								<i>D.V. TOOL - 61 @ 1543</i>
	<i>300</i>							<i>Start running CSQ</i>
	<i>340</i>							<i>CSQ crew pickup broke down</i>
	<i>530</i>							<i>Resume running CSQ</i>
	<i>645</i>							<i>Break circ. on bottom</i>
								<i>1st Stage</i>
	<i>715</i>	<i>6</i>	<i>12</i>			<i>300</i>		<i>pump mud flush - 500 GAL</i>
		<i>6</i>	<i>20</i>			<i>300</i>		<i>pump Kel spacer</i>
	<i>725</i>	<i>6</i>	<i>37</i>			<i>300</i>		<i>pump cmt - 150 sks EA-2 @ 15.5 ppg</i>
								<i>Drop plug - wash p &amp; L</i>
	<i>740</i>	<i>6</i>	<i>0</i>					<i>Start Disp</i>
	<i>800</i>	<i>5</i>	<i>96</i>			<i>800</i>		<i>land plug - lift psi - 800</i>
								<i>land psi - 1500</i>
								<i>Release psi - Dry</i>
								<i>Drop D.V. opening tool</i>
	<i>805</i>	<i>2.5</i>	<i>16</i>			<i>0</i>		<i>plug rat hole - 30 sks</i>
		<i>2.5</i>	<i>11</i>			<i>0</i>		<i>plug mouse hole - 20 sks</i>
	<i>810</i>					<i>1400</i>		<i>Open D.V. TOOL</i>
								<i>2nd Stage</i>
								<i>pump Kel spacer</i>
	<i>815</i>		<i>85</i>					<i>pump cmt - 150 sks SMD @ 11.2 ppg</i>
								<i>Drop D.V. closing plug</i>
	<i>830</i>	<i>5</i>	<i>0</i>					<i>Start Disp</i>
	<i>815</i>	<i>5</i>	<i>37.5</i>			<i>600</i>		<i>End Disp lift psi - 600</i>
								<i>land psi - 1500</i>
								<i>Release psi - Dry</i>
								<i>Circulated 5 sks cmt to pit</i>

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## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

**Hall #2-14**

**14-13S-21W Trego,KS**

Start Date: 2017.05.14 @ 08:41:05

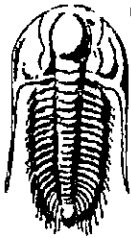
End Date: 2017.05.14 @ 14:26:29

Job Ticket #: 64779                      DST #: 1

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WICHITA, KS

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

Printed: 2017.05.15 @ 15:57:59



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co. Inc

14-13S-21W Trego, KS

PO Box 1019  
Hays, KS 67601

Hall #2-14

Job Ticket: 64779

DST#: 1

ATTN: Marc Downing

Test Start: 2017.05.14 @ 08:41:05

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:22:30

Time Test Ended: 14:26:29

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3814.00 ft (KB) To 3840.00 ft (KB) (TVD)**

Total Depth: 3840.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2200.00 ft (KB)

2192.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8960

Outside

Press@RunDepth: 49.31 psig @ 3837.00 ft (KB)

Start Date: 2017.05.14

End Date:

2017.05.14

Start Time: 08:41:05

End Time:

14:26:29

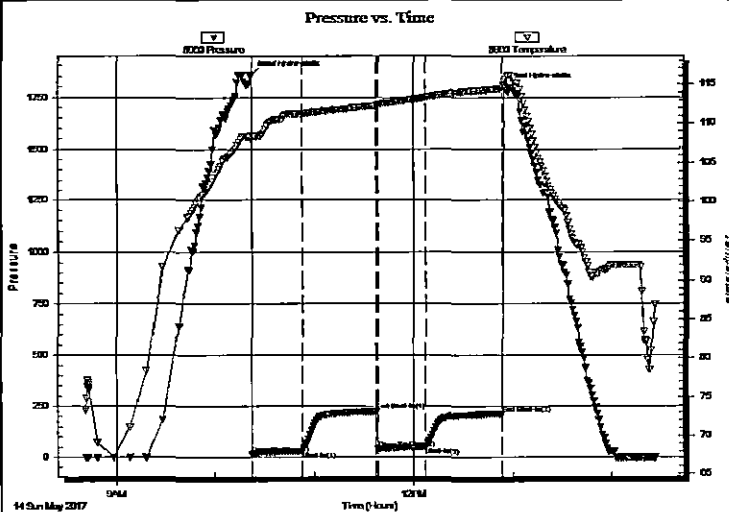
Capacity: 8000.00 psig

Last Calib.: 2017.05.14

Time On Btm: 2017.05.14 @ 10:22:00

Time Off Btm: 2017.05.14 @ 12:55:00

TEST COMMENT: IFP 30 Minutes/ Blow built to 1 1/2 inch  
ISI 45 Minutes/ No blow back  
FFP 30 Minutes Blow built to 1 1/4" then died to 1/2"  
FSI 45 Minutes No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1853.98	108.50	Initial Hydro-static
1	12.45	107.92	Open To Flow (1)
31	29.81	111.28	Shut-In(1)
76	224.69	112.29	End Shut-In(1)
77	38.47	112.31	Open To Flow(2)
106	49.31	113.37	Shut-In(2)
152	212.79	114.48	End Shut-In(2)
153	1797.82	115.33	Final Hydro-static

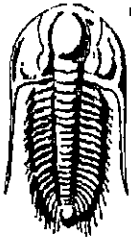
## Recovery

Length (ft)	Description	Volume (bbl)
75.00	OCM Oil 35% Mud 65%	1.05
30.00	Clean Oil 100%	0.42
0.00	135' GIP	0.00

## Gas Rates

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

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**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co. Inc

14-13S-21W Trego, KS

PO Box 1019  
Hays, KS 67601

Hall #2-14

Job Ticket: 64779

DST#: 1

ATTN: Marc Downing

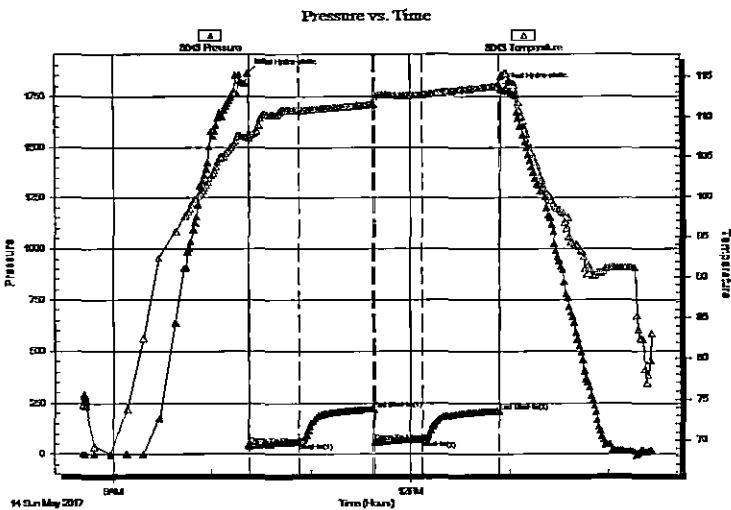
Test Start: 2017.05.14 @ 08:41:05

## GENERAL INFORMATION:

Formation: **Marmaton**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 10:22:30  
 Tester: Ken Swinney  
 Time Test Ended: 14:26:29  
 Unit No: 72  
 Interval: 3814.00 ft (KB) To 3840.00 ft (KB) (TVD)  
 Reference Elevations: 2200.00 ft (KB)  
 Total Depth: 3840.00 ft (KB) (TVD)  
 2192.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 KB to GR/CF: 8.00 ft

Serial #: 8648 Inside  
 Press@RunDepth: 212.10 psig @ 3836.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.05.14 End Date: 2017.05.14 Last Calib.: 2017.05.14  
 Start Time: 08:41:05 End Time: 14:26:29 Time On Btm: 2017.05.14 @ 10:22:00  
 Time Off Btm: 2017.05.14 @ 12:55:00

TEST COMMENT: IFP 30 Minutes/ Blow built to 1 1/2 inch  
 ISI 45 Minutes/ No blow back  
 FFP 30 Minutes Blow built to 1 1/4" then died to 1/2"  
 FSI 45 Minutes No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1861.19	107.90	Initial Hydro-static
1	43.97	107.64	Open To Flow (1)
31	60.51	110.71	Shut-In(1)
76	221.24	111.51	End Shut-In(1)
77	60.70	112.41	Open To Flow (2)
106	70.31	112.71	Shut-In(2)
152	212.10	113.74	End Shut-In(2)
153	1793.66	115.00	Final Hydro-static

## Recovery

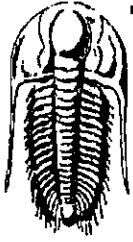
Length (ft)	Description	Volume (bbl)
75.00	OCM Oil 35% Mud 65%	1.05
30.00	Clean Oil 100%	0.42
0.00	135' GIP	0.00

## Gas Rates

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

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 OCT 06 2017  
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 WICHITA, KS





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing Nelson Oil Co. Inc

**14-13S-21W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Hall #2-14**

Job Ticket: 64779

**DST#:1**

ATTN: Marc Downing

Test Start: 2017.05.14 @ 08:41:05

## Tool Information

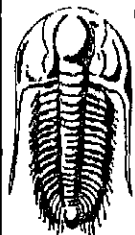
Drill Pipe:	Length: 3506.00 ft	Diameter: 3.80 inches	Volume: 49.18 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 309.00 ft	Diameter: 3.80 inches	Volume: 4.33 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 53.51 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3814.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3799.00	
Hydraulic tool	5.00			3804.00	
Top Packer	5.00			3809.00	
Packer	5.00			3814.00	20.00 Bottom Of Top Packer
Anchor	21.00			3835.00	
Recorder	1.00	8648	Inside	3836.00	
Recorder	1.00	8960	Outside	3837.00	
Bullnose	3.00			3840.00	26.00 Anchor Tool

**Total Tool Length: 46.00**

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WICHITA, KS



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing Nelson Oil Co. Inc

**14-13S-21W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Hall #2-14**

Job Ticket: 64779

**DST#: 1**

ATTN: Marc Downing

Test Start: 2017.05.14 @ 08:41:05

## 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: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
75.00	OCM Oil 35% Mud 65%	1.052
30.00	Clean Oil 100%	0.421
0.00	135' GIP	0.000

Total Length: 105.00 ft

Total Volume: 1.473 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

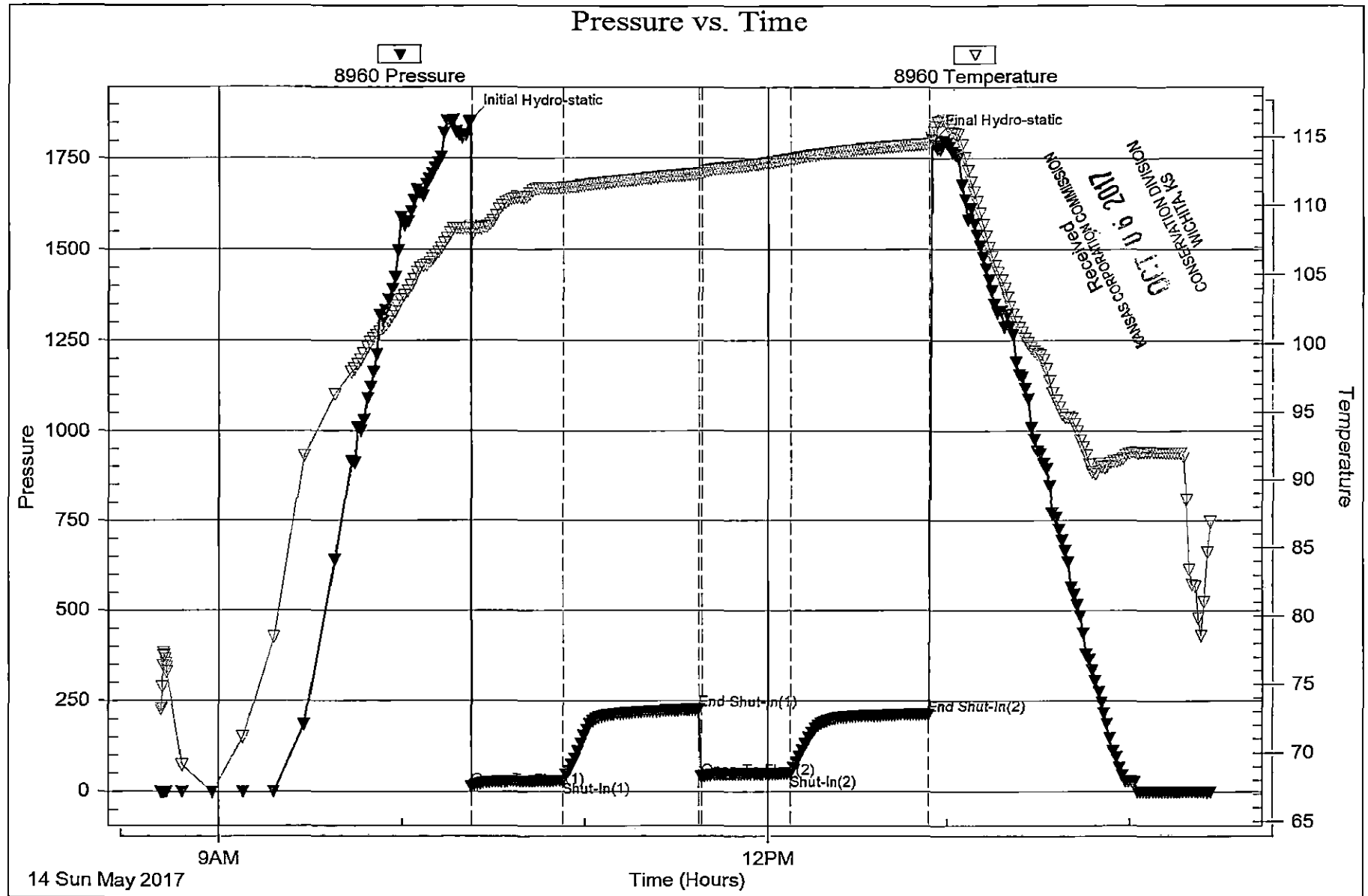
Serial #:

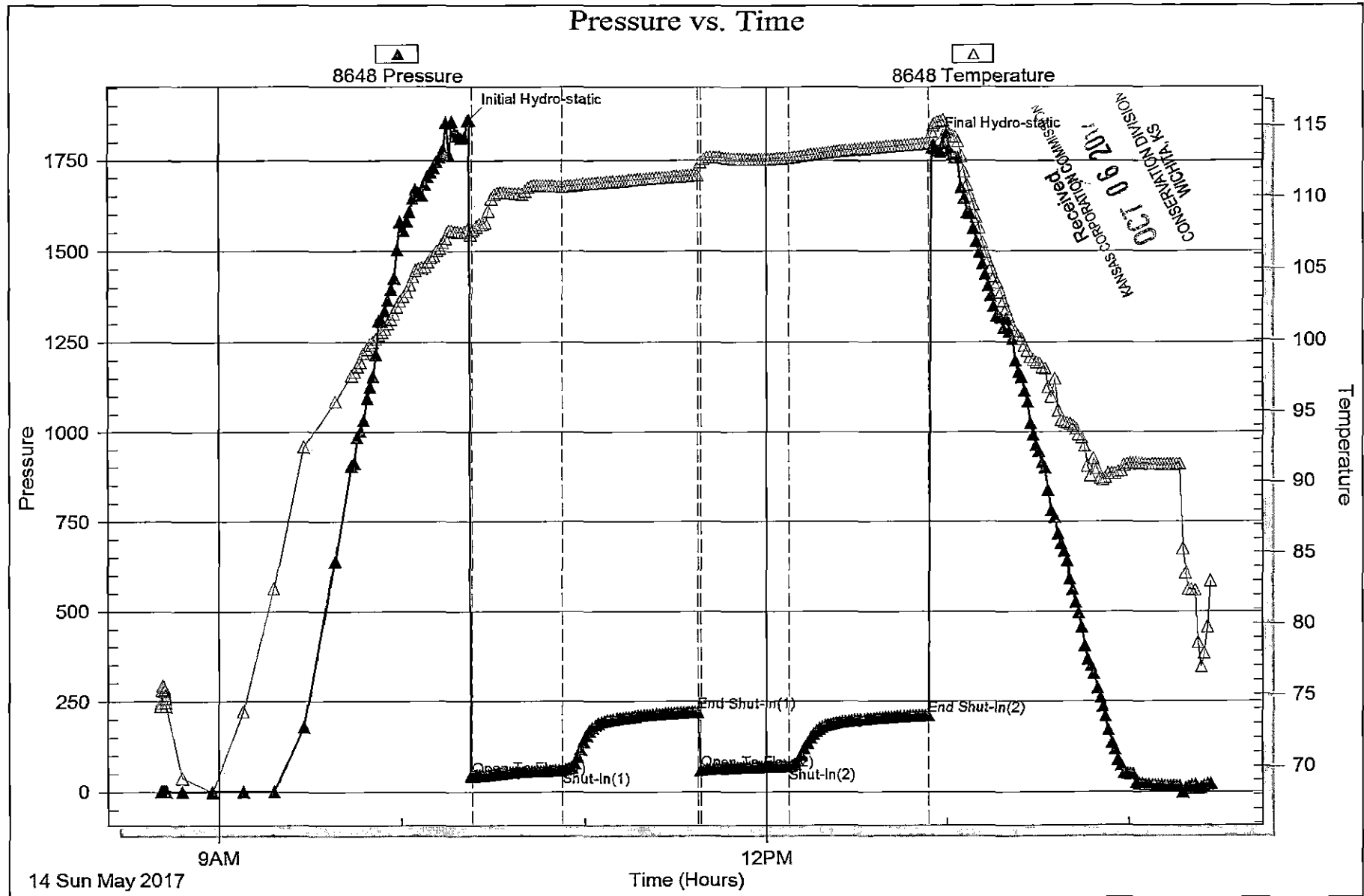
Laboratory Name:

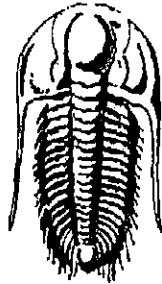
Laboratory Location:

Recovery Comments:

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**OCT 05 2017**  
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WICHITA, KS







**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

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

PO Box 1019  
Hays, KS 67601

ATTN: Marc Downing

**Hall #2-14**

**14-13S-21W Trego,KS**

Start Date: 2017.05.14 @ 22:50:00

End Date: 2017.05.15 @ 06:05:43

Job Ticket #: 64780                      DST #: 2

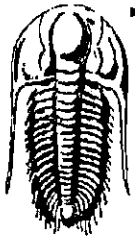
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WICHITA, KS

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

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

Printed: 2017.05.15 @ 15:57:31



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co. Inc

**14-13S-21W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Hall #2-14**

Job Ticket: 64780

**DST#: 2**

ATTN: Marc Downing

Test Start: 2017.05.14 @ 22:50:00

## GENERAL INFORMATION:

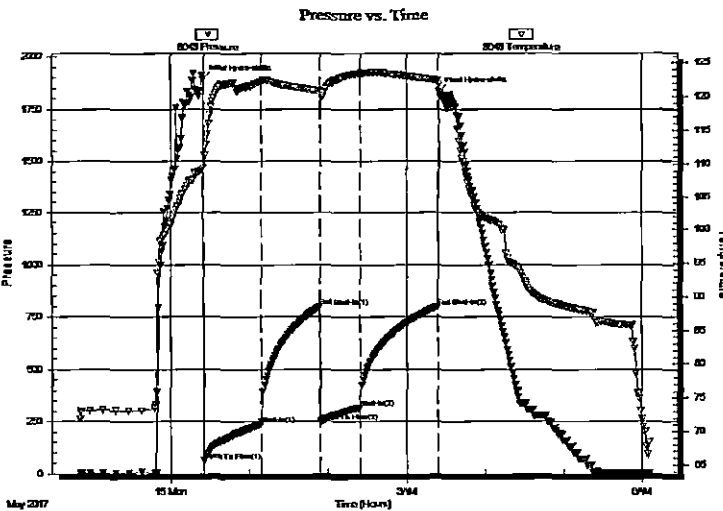
Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:25:43  
 Time Test Ended: 08:05:43  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ken Swinney  
 Unit No: 72  
 Interval: **3836.00 ft (KB) To 3867.00 ft (KB) (TVD)**  
 Reference Elevations: 2200.00 ft (KB)  
 Total Depth: 3867.00 ft (KB) (TVD) 2192.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

## Serial #: 8648

Inside

Press@RunDepth: 318.71 psig @ 3863.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.05.14 End Date: 2017.05.15 Last Calib.: 2017.05.15  
 Start Time: 22:50:05 End Time: 06:05:43 Time On Btm: 2017.05.15 @ 00:24:43  
 Time Off Btm: 2017.05.15 @ 03:24:43

TEST COMMENT: IFP 45 Minutes Blow built to 7 1/2" then died to 2"  
 ISI 45 Minutes No blow back  
 FFP 30 Minutes Blow built to 1/2" then died in 18 minutes  
 FSI 60 Minutes No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1893.37	109.35	Initial Hydro-static
1	63.16	111.24	Open To Flow (1)
45	236.59	122.24	Shut-In(1)
89	797.17	120.89	End Shut-In(1)
90	251.49	120.53	Open To Flow (2)
120	318.71	123.45	Shut-In(2)
179	799.45	122.37	End Shut-In(2)
180	1834.61	121.74	Final Hydro-static

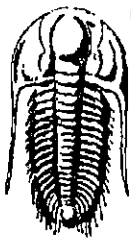
## Recovery

Length (ft)	Description	Volume (bbl)
248.00	GMC Emuls Oil Mud 15% Gas 40% EO	53.48
558.00	CGO Gas 30% Oil 70%	7.83
0.00	434' GIP	0.00

## Gas Rates

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

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**TRILOBITE  
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# DRILL STEM TEST REPORT

Downing Nelson Oil Co. Inc

**14-13S-21W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Hall #2-14**

Job Ticket: 64780

**DST#: 2**

ATTN: Marc Downing

Test Start: 2017.05.14 @ 22:50:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:25:43

Time Test Ended: 06:05:43

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3836.00 ft (KB) To 3867.00 ft (KB) (TVD)**

Reference Elevations: 2200.00 ft (KB)

Total Depth: 3867.00 ft (KB) (TVD)

2192.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8960**

**Outside**

Press@RunDepth: 793.98 psig @ 3864.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.05.14

End Date:

2017.05.15

Last Calib.: 2017.05.15

Start Time: 22:48:05

End Time:

06:05:29

Time On Btm: 2017.05.15 @ 00:24:30

Time Off Btm: 2017.05.15 @ 03:24:30

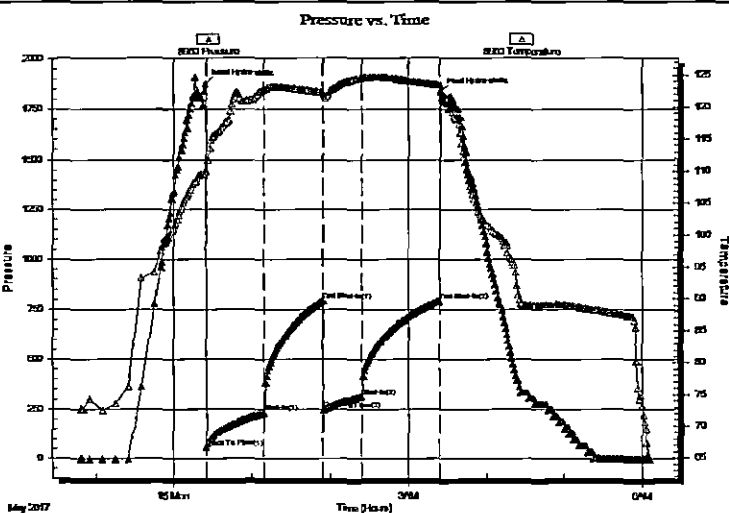
TEST COMMENT: IFP 45 Minutes Blow built to 7 1/2" then died to 2"

ISI 45 Minutes No blow back

FFP 30 Minutes Blow built to 1/2" then died in 18 minutes

FSI 60 Minutes No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1875.46	110.01	Initial Hydro-static
1	56.58	110.08	Open To Flow (1)
45	231.60	122.65	Shut-In(1)
90	793.54	122.28	End Shut-In(1)
91	246.47	122.04	Open To Flow (2)
120	313.99	124.55	Shut-In(2)
179	793.98	123.39	End Shut-In(2)
180	1836.18	123.53	Final Hydro-static

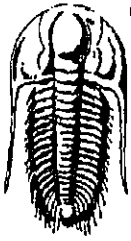
## Recovery

Length (ft)	Description	Volume (bbl)
248.00	GMC Emuls Oil Mud 15% Gas 40% EO	53.48
558.00	CGO Gas 30% Oil 70%	7.83
0.00	434' GIP	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**

Downing Nelson Oil Co. Inc

**14-13S-21W Trego,KS**

PO Box 1019  
Hays, KS 67601

**Hall #2-14**

Job Ticket: 64780

**DST#: 2**

ATTN: Marc Downing

Test Start: 2017.05.14 @ 22:50:00

**Tool Information**

Drill Pipe:	Length: 3533.00 ft	Diameter: 3.80 inches	Volume: 49.56 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 309.00 ft	Diameter: 3.80 inches	Volume: 4.33 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 64000.00 lb
		<u>Total Volume:</u>	<u>53.89 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	3836.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	51.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

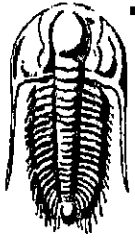
**Tool Description**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3821.00	
Hydraulic tool	5.00			3826.00	
Top Packer	5.00			3831.00	
Packer	5.00			3836.00	20.00 Bottom Of Top Packer
Anchor	26.00			3862.00	
Recorder	1.00	8648	Inside	3863.00	
Recorder	1.00	8960	Outside	3864.00	
Bullnose	3.00			3867.00	31.00 Anchor Tool

**Total Tool Length: 51.00**

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**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Downing Nelson Oil Co. Inc

14-13S-21W Trego,KS

PO Box 1019  
Hays, KS 67601

Hall #2-14

Job Ticket: 64780

DST#: 2

ATTN: Marc Downing

Test Start: 2017.05.14 @ 22:50:00

**Mud and Cushion Information**

Mud Type: Gel Chem	Cushion Type:	Oil API: 42 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.38 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 6000.00 ppm		
Filter Cake: 1.00 inches		

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
248.00	GMC Emuls Oil Mud 15% Gas 40% EO 45%	3.479
558.00	CGO Gas 30% Oil 70%	7.827
0.00	434' GIP	0.000

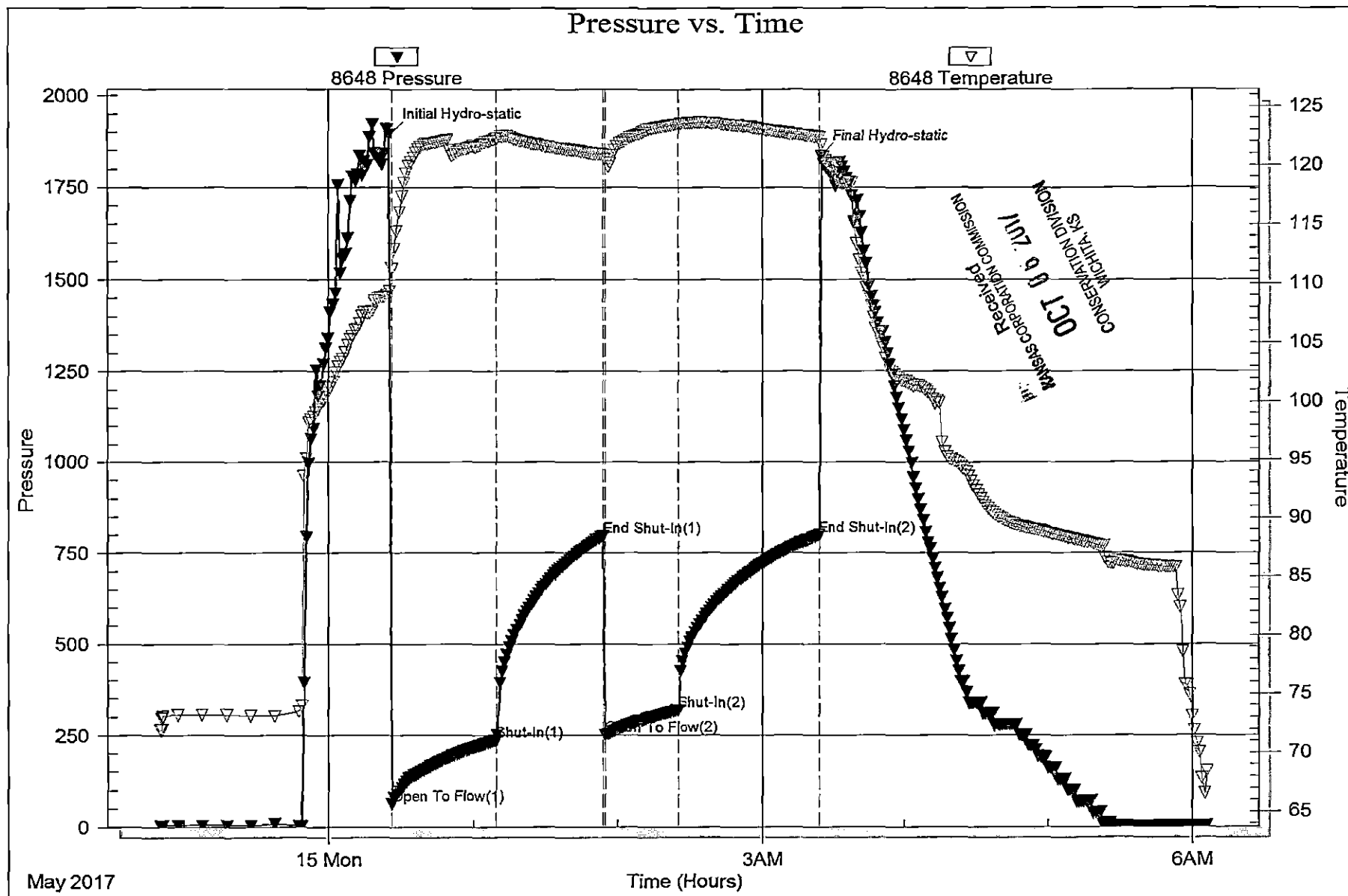
Total Length: 806.00 ft      Total Volume: 11.306 bbl

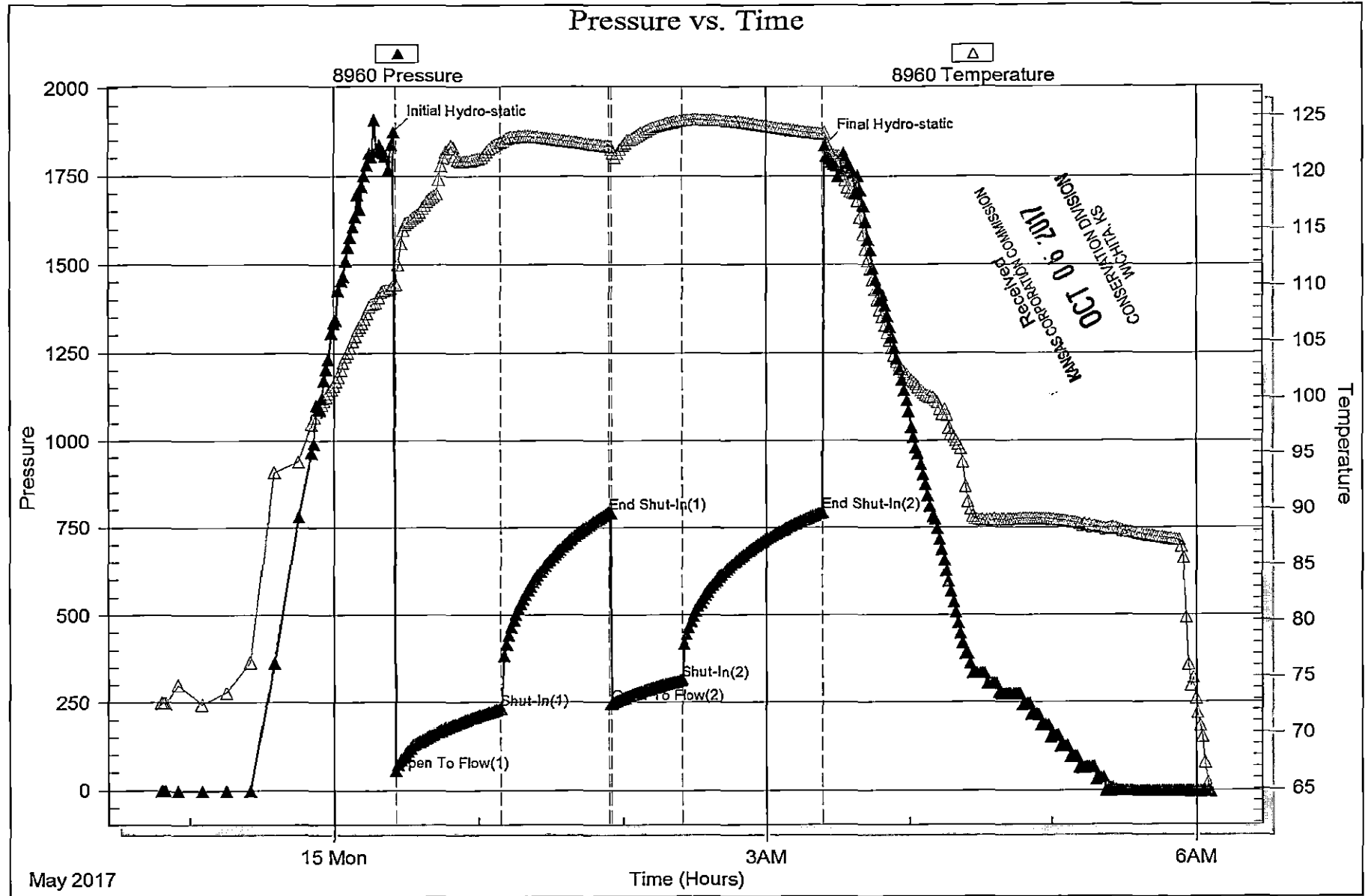
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

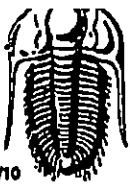
Laboratory Name:      Laboratory Location:

Recovery Comments:

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# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64779

Well Name & No. Hall 2-14 Test No. 2 Date 14 MAY 17  
 Company Downing-Nelson Oil Co. Inc. Elevation 2200 KB 2192 GL  
 Address PO Box 1019 Hays, Kansas 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 2  
 Location: Sec. 14 Twp. 13S Rge. 21W Co. Trego State KS

Interval Tested 3814-3840 Zone Tested Marmaton  
 Anchor Length 26 Drill Pipe Run 3506 Mud Wt. 8.7  
 Top Packer Depth 3809 Drill Collars Run — Vis 45  
 Bottom Packer Depth 3814 Wt. Pipe Run 309.44 WL 8.0  
 Total Depth 3840 Chlorides 2000 ppm System LCM 1.5#

Blow Description I.F. Blow built to 1 1/2 inch

I.S.I No blow back

F.F. Blow built to 1 1/4 inch then died to 1/2 inch

F.S.I No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>75</u>	<u>Feet of Oily Mud</u>		<u>35%</u>		<u>65%</u>
<u>30</u>	<u>Feet of Clean O.I</u>		<u>100%</u>		
<u>135</u>	<u>Feet of Gas in pipe</u>	<u>100%</u>			

Rec Total 105 BHT 113 Gravity 36 API RW @ — °F Chlorides — ppm

- (A) Initial Hydrostatic 1861
- (B) First Initial Flow 43
- (C) First Final Flow 60
- (D) Initial Shut-In 221
- (E) Second Initial Flow 60
- (F) Second Final Flow 20
- (G) Final Shut-In 212
- (H) Final Hydrostatic 1793

- Test 1050
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 44rt 33
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1083

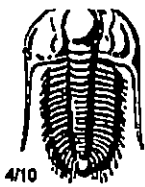
T-On Location 8:06 am  
 T-Started 8:41 am  
 T-Open 10:23 am  
 T-Pulled 12:53 pm  
 T-Out 2:26 pm

Comments \_\_\_\_\_  
 Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1083  
 MP/DST Disc't \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 45

Approved By \_\_\_\_\_ Our Representative [Signature]

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.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 64780

Well Name & No. Hall 2-14 Test No. 2 Date 14 MAY 17  
 Company Downing-Nelson O.I. Co., Inc. Elevation 2200 KB 2192 GL  
 Address PO Box 1019 Hays Kansas 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 2  
 Location: Sec. 14 Twp. 135 Rge. 21W Co. Trego State KS

Interval Tested 3836-3867 Zone Tested Arbuckle  
 Anchor Length 31 Drill Pipe Run 3533 Mud Wt. 8.9  
 Top Packer Depth 3831 Drill Collars Run — Vis 57  
 Bottom Packer Depth 3836 Wt. Pipe Run 309 WL 8.4  
 Total Depth 3867 Chlorides 6000 ppm System LCM 2#

Blow Description I.F. Blow built to 7/8 inches in 15 minutes then died to 2 inches  
E.S.I. No blowback  
E.F. Blow built to 1/2 inch then died in 18 minutes  
E.S.I. No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>248</u>	<u>Feet of Mud cut Gassy Emulsified Oil</u>	<u>40</u>	<u>45</u>	<u>15</u>	<u>—</u>
<u>558</u>	<u>Feet of Clean Gassy Oil</u>	<u>30</u>	<u>70</u>	<u>—</u>	<u>—</u>
<u>434</u>	<u>Feet of Gas in Pipe</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>Feet of</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>Feet of</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Rec Total 806 BHT 122 Gravity 42 API RW — @ — °F Chlorides — ppm  
 (A) Initial Hydrostatic 1893  Test 1050 T-On Location 9:30 pm  
 (B) First Initial Flow 63  Jars — T-Started 10:50 pm  
 (C) First Final Flow 236  Safety Joint — T-Open 12:27 am  
 (D) Initial Shut-In 797  Circ Sub — T-Pulled 3:27 am  
 (E) Second Initial Flow 257  Hourly Standby — T-Out 6:08 am  
 (F) Second Final Flow 318  Mileage 44rt 33 Comments —  
 (G) Final Shut-In 799  Sampler —  
 (H) Final Hydrostatic 1834  Straddle —  
 Shale Packer —  
 Extra Packer —  
 Extra Recorder —  
 Day Standby —  
 Accessibility —  
 Sub Total 1083

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 OCT 06 2017  
 CONSERVATION DIVISION  
 WICHITA, KS

Approved By \_\_\_\_\_ Our Representative [Signature]  
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