

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       SLOW
- 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>07/11/2017</u>	<u>07/18/2017</u>	<u>09/14/2017</u>
Spud Date or	Date Reached TD	Completion Date or
Recompletion Date		Recompletion Date

API No. 15 - 195-23,025-00-00

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

SW SE NW SE Sec. 17 Twp. 13 S. R. 21  East  West

1,537 Feet from  North /  South Line of Section

1,722 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: Bolig Well #: 2-17

Field Name: Riga

Producing Formation: Marmaton

Elevation: Ground: 2190 Kelly Bushing: 2198

Total Vertical Depth: 3970 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: 1571 Feet

If Alternate II completion, cement circulated from: 1571

feet depth to: 0 w/ 155 sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: 44,000 ppm Fluid volume: 320 bbls

Dewatering method used: Hauled free fluid

Location of fluid disposal if hauled offsite:

Operator Name: Downing Nelson Oil Co., Inc

Lease Name: Dinkel #1 (SWD) License #: 30717

Quarter NW4 Sec. 3 Twp. 14 S. R. 21  East  West

County: Trego Permit #: D-25,156

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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: Mitch Meru

Title: Office Manager Date: 10/03/2017

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: Bolig Well #: 2-17  
 Sec. 17 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 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: <b>Micro, Compensated Density Neutron, Dual Induction</b>	<input checked="" type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Name</th> <th style="text-align: left;">Top</th> <th style="text-align: left;">Datum</th> </tr> </thead> <tbody> <tr> <td>Top Anhydrite</td> <td>1602'</td> <td>+597</td> </tr> <tr> <td>Base Anhydrite</td> <td>1640'</td> <td>+559</td> </tr> <tr> <td>Topeka</td> <td>3277'</td> <td>-1078</td> </tr> <tr> <td>Heebner</td> <td>3504'</td> <td>-1305</td> </tr> <tr> <td>Toronto</td> <td>3524'</td> <td>-1325</td> </tr> <tr> <td>LKC</td> <td>3538'</td> <td>-1339</td> </tr> <tr> <td>BKC</td> <td>3778'</td> <td>-1579</td> </tr> </tbody> </table>	Name	Top	Datum	Top Anhydrite	1602'	+597	Base Anhydrite	1640'	+559	Topeka	3277'	-1078	Heebner	3504'	-1305	Toronto	3524'	-1325	LKC	3538'	-1339	BKC	3778'	-1579
Name	Top	Datum																							
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LKC	3538'	-1339																							
BKC	3778'	-1579																							

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	3965	EA/2	150	

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing				
___ Plug Back TD				
___ 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 <i>(Amount and Kind of Material Used)</i>	Depth
4	3879'-3888'	500 gallons 20% Mud Acid	3879-3888

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TUBING RECORD: Size: 2.375 Set At: 3909 Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. <u>09/14/2017</u>	Producing Method: <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
Estimated Production Per 24 Hours	Oil Bbls. <u>43</u> Gas Mcf <u>0</u> Water Bbls. <u>2</u> Gas-Oil Ratio _____ Gravity _____

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

PO Box 1019

Hays, KS 67601

**Lease**      Bollig #2-17

**API #**      15-195-23025-00-00

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

<b>Formation</b>	<b>Log Tops</b>	<b>Datum</b>
Top Anhydrite	1602'	+597
Base Anhydrite	1640'	+559
Topeka	3277'	-1078
Heebner	3504'	-1305
Toronto	3524'	-1325
LKC	3538'	-1339
BKC	3778'	-1579
Marmaton	3866'	-1667
Cherokee Shale	3909'	-1710
Arbuckle	3950'	-1751

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CHARGE TO:  
Downing-Nelson Oil Co Inc

ADDRESS

CITY, STATE, ZIP CODE

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TICKET 30436

PAGE 1 OF 1

SERVICE LOCATIONS 1. Hays Ks 2. Ness City Ks	WELL/PROJECT NO. 2-17	LEASE Bolling	COUNTY/PARISH Trego	STATE Ks	CITY	DATE 7-11-17	OWNER
	TICKET TYPE <input type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR Discovery Drilling	RIG NAME/NO. Rig # 4	SHIPPED Via	DELIVERED TO Location	ORDER NO.	
	WELL TYPE Oil	WELL CATEGORY development	JOB PURPOSE Shallow Surface	WELL PERMIT NO.	WELL LOCATION		
REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575		1			MILEAGE Trk # 11D	30	Mi			5.00	150.00
576S		1			Pump Charge	1	EA			800.00	800.00
290		1			D-Air	2	Gal			42.00	84.00
325		2			Standard Cmt	150	SLS			12.25	1837.50
279		2			Bentonite Gel	3	SLS			25.00	75.00
278		2			Calcium Chloride	7	SLS			40.00	280.00
581		2			SERVICE CHARGE CEMENT	150	SLS			1.50	225.00
582		2			MINIMUM DRAINAGE CHARGE	14750	LBS	221.25	TM	250.00	250.00

**LEGAL TERMS:** Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X  
DATE SIGNED 7-11-17 TIME SIGNED 1530 P.M.

REMIT PAYMENT TO:

SWIFT SERVICES, INC.  
P.O. BOX 466  
NESS CITY, KS 67560  
785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL	
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?					3226.50
WE UNDERSTOOD AND MET YOUR NEEDS?				1070	3701.50
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				0.55	-370.15
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Tregola	3331.35
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		TAX @ 8.0%	163.91
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL	3495.26

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES: The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR David Edgerton APPROVAL

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE

7-11-17

CUSTOMER

Downing-Nelson

WELL NO.

2-17

LEASE

Rollin

JOB TYPE

Shallow Surf.

TICKET NO.

30436

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1530							On location
								Csg- 8 5/8
								RTD- 221
								pipe- 221
	1600							Break Circ on Bottom
	1615	5	5					pump wtr spacer
		5	36					pump cmr
	1625	5	12					Disp cmr
	1630							End Disp
								Circulated 40 sks cmr to p
								Thanks
								David, Austin & Isaac

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WICHITA, KS

JOB LOG

SWIFT Services, Inc.

DATE 7-14-17 PAGE NO. 1

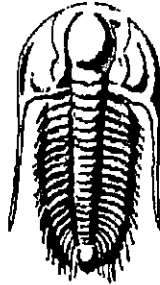
CUSTOMER Dawing & Nelson WELL NO. \*2-7 LEASE Bollig JOB TYPE 5 1/2" Two-Stage TICKET NO. 30706

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0630							on location 5 1/2" 14"
								RTD-3970' LTD-3970'
								TP-3965' SS-42.35'
								D.U. #57 1570'
								cent - #13#5#7#9#11#56
								Basket - #57
	0730							Start 5 1/2" 14" casing in well
	0900							Drop ball Circulate *Rotate*
	0950	6 1/2	12		✓	300		Pump 500 gal Mud Flush
		6 1/2	20		✓	300		Pump 20 bbl KCL Flush
	0955	4 1/2	36		✓	200		Mix 150 sks EA-2 @ 15.5 ppq
								wash out Pump + Lines
								Release Latch Down Plug
	1010	6 1/2	∅		✓	100		Start Displacement
		6 1/2	58		✓	200		Pump Mud
	1030	6 1/2	95.7		✓	1500		Land Latch Down Plug *Release Hold*
	1035							Drop Bomb
	1045	∅	∅		✓	1400		Open D.U. Tool
	1055	6 1/2	20		✓	200		Pump 20 bbl KCL Flush
			15-7					Plug RH-MH (30-15)
	1110	5 1/2	86		✓	200		Mix 155 sks SMD 1/4" Fl @ 11.2 ppq
								wash out Pump + Lines
								Release Top Plug
	1135	5 1/2	∅		✓	100		Start Displacement
		5 1/2	27		✓	300		Circulate Cement to Surface *20sks*
	1145	5 1/2	38		✓	1800		Land Top Plug Close D.U. Tool
								Release Pressure *Hold*
								wash up trucks
	1215							Job Complete

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Thank You  
Dave Preston Isaac



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

## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co**

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Bollig #2-17**

**17-13S-21W Trego,KS**

Start Date: 2017.07.15 @ 14:50:00

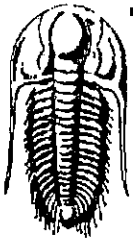
End Date: 2017.07.15 @ 21:24:00

Job Ticket #: 62989                      DST #: 1

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

Printed: 2017.07.19 @ 08:52:43



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62989

DST#: 1

ATTN: Marc Downing

Test Start: 2017.07.15 @ 14:50:00

### GENERAL INFORMATION:

Formation: **LKC "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:49:15

Time Test Ended: 21:24:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3560.00 ft (KB) To 3585.00 ft (KB) (TVD)**

Total Depth: 3585.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2197.00 ft (KB)

2190.00 ft (CF)

KB to GR/CF: 7.00 ft

**Serial #: 8934**

**Outside**

Press@RunDepth: 50.70 psig @ 3561.00 ft (KB)

Start Date: 2017.07.15

End Date:

2017.07.15

Start Time: 14:50:15

End Time:

21:24:00

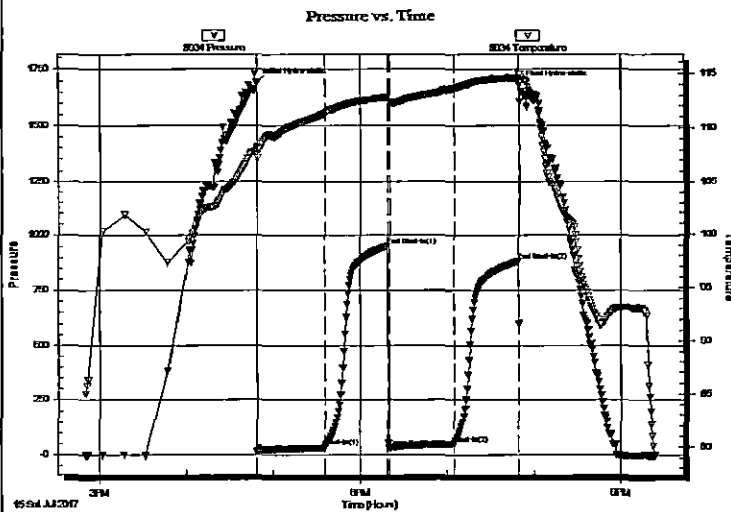
Capacity: 8000.00 psig

Last Calib.: 2017.07.15

Time On Btm: 2017.07.15 @ 16:49:00

Time Off Btm: 2017.07.15 @ 19:49:30

**TEST COMMENT:** IF-45-Fair Blow; BOB in 25 mins  
 IS-45-Weak Blow; Surface Blow throughout  
 FF-45-Fair Blow; BOB in 13 mins  
 FS-45-Weak Surface Blow Throughout



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1691.42	108.23	Initial Hydro-static
1	13.60	107.23	Open To Flow (1)
47	34.60	111.28	Shut-In(1)
90	951.75	112.77	End Shut-In(1)
91	33.47	112.42	Open To Flow (2)
136	50.70	113.59	Shut-In(2)
180	884.36	114.61	End Shut-In(2)
181	1679.58	114.92	Final Hydro-static

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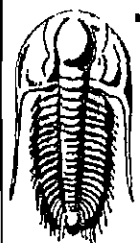
### Recovery

Length (ft)	Description	Volume (bbl)
100.00	MCO 40%M 60%O	1.11
0.00	350' GIP	0.00

### Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

Bollig #2-17

Job Ticket: 62989

DST#: 1

ATTN: Marc Downing

Test Start: 2017.07.15 @ 14:50:00

## GENERAL INFORMATION:

Formation: **LKC "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:49:15

Time Test Ended: 21:24:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3560.00 ft (KB) To 3585.00 ft (KB) (TVD)**

Total Depth: 3585.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2197.00 ft (KB)

2190.00 ft (CF)

KB to GR/CF: 7.00 ft

**Serial #: 9120**

Inside

Press@RunDepth: psig @ 3561.00 ft (KB)

Start Date: 2017.07.15

End Date:

2017.07.15

Start Time: 14:50:15

End Time:

21:24:00

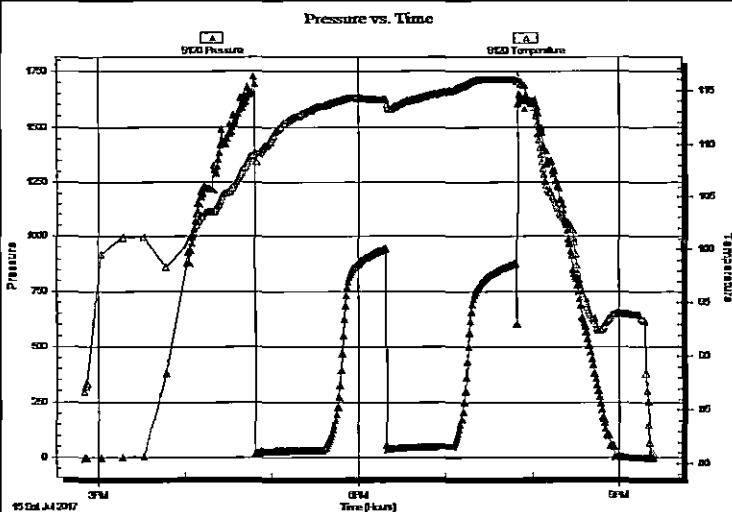
Capacity: 8000.00 psig

Last Calib.: 2017.07.15

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF-45-Fair Blow; BOB in 25 mins  
IS-45-Weak Blow; Surface Blow throughout  
FF-45-Fair Blow; BOB in 13 mins  
FS-45-Weak Surface Blow Throughout



## PRESSURE SUMMARY

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

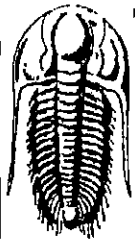
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## Recovery

Length (ft)	Description	Volume (bbl)
100.00	MCO 40%M 60%O	1.11
0.00	350' GIP	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing Nelson Oil Co

**17-13S-21W Trego,KS**

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62989

**DST#: 1**

ATTN: Marc Downing

Test Start: 2017.07.15 @ 14:50:00

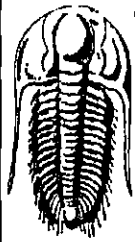
**Tool Information**

Drill Pipe:	Length: 3516.00 ft	Diameter: 3.80 inches	Volume: 49.32 bbl	Tool Weight: 2000.00 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: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 62000.00 lb
		<i>Total Volume:</i>	<i>49.48 bbl</i>	<i>Tool Chased 0.00 ft</i>
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	3560.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	45.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3541.00	
Shut In Tool	5.00			3546.00	
Hydraulic tool	5.00			3551.00	
Packer	5.00			3556.00	20.00 Bottom Of Top Packer
Packer	4.00			3560.00	
Stubb	1.00			3561.00	
Recorder	0.00	9120	Inside	3561.00	
Recorder	0.00	8934	Outside	3561.00	
Perforations	20.00			3581.00	
Bullnose	4.00			3585.00	25.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>45.00</b>				

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**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing Nelson Oil Co

**17-13S-21W Trego,KS**

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62989

**DST#: 1**

ATTN: Marc Downing

Test Start: 2017.07.15 @ 14:50:00

## 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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
100.00	MCO 40%M 60%O	1.111
0.00	350' GIP	0.000

Total Length: 100.00 ft

Total Volume: 1.111 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

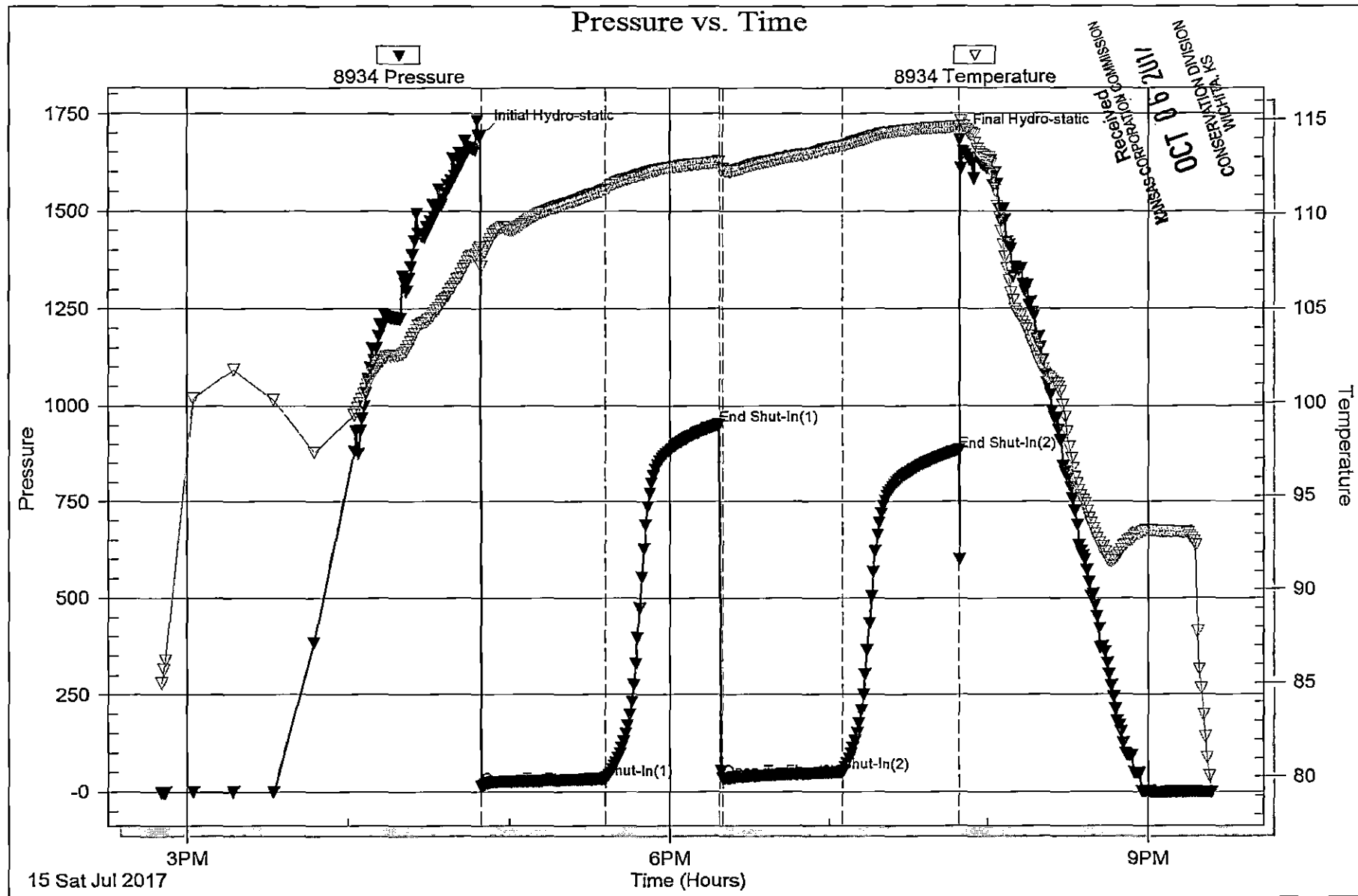
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1&1/2#LCM

Received  
KANSAS CORPORATION COMMISSION  
**OCT 06 2017**  
CONSERVATION DIVISION  
WICHITA, KS



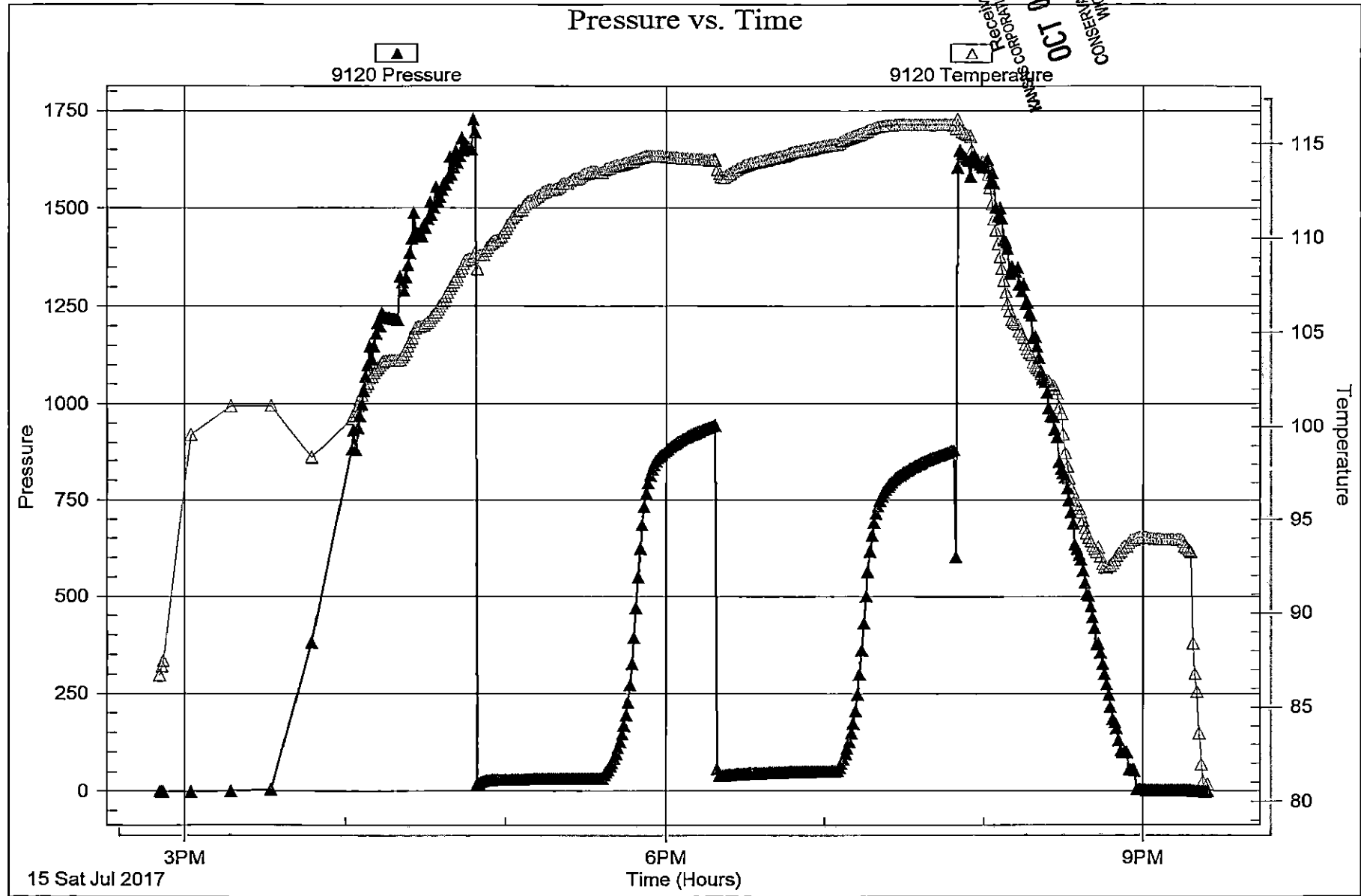
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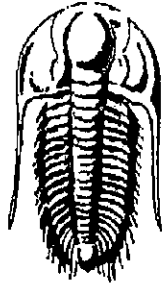
Inside Downing Nelson Oil Co

Bollig #2-17

DST Test Number: 1

WICHITA, KS  
CONCRETE DIVISION  
OCT 09 2017  
KRM  
Accepted for  
operation  
Commission





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

## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co**

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Bollig #2-17**

**17-13S-21W Trego,KS**

Start Date: 2017.07.16 @ 04:53:00

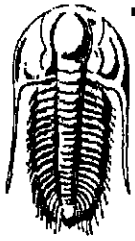
End Date: 2017.07.16 @ 10:04:00

Job Ticket #: 62990                      DST #: 2

Received  
KANSAS CORPORATION COMMISSION  
**OCT 06 2017**  
CONSERVATION DIVISION  
WICHITA, KS

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

Printed: 2017.07.19 @ 08:52:19



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62990

**DST#: 2**

ATTN: Marc Downing

Test Start: 2017.07.16 @ 04:53:00

## GENERAL INFORMATION:

Formation: **LKC "E"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 06:39:45  
 Time Test Ended: 10:04:00  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Interval: **3600.00 ft (KB) To 3617.00 ft (KB) (TVD)**  
 Total Depth: 3617.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Reference Elevations: 2197.00 ft (KB)  
 2190.00 ft (CF)  
 KB to GR/CF: 7.00 ft

**Serial #: 8934**

**Outside**

Press@RunDepth: 35.73 psig @ 3601.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.07.16

End Date:

2017.07.16

Last Calib.: 2017.07.16

Start Time: 04:53:15

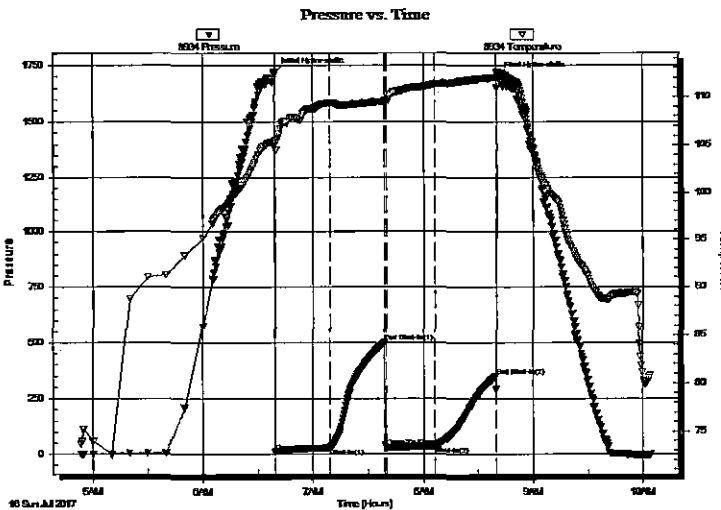
End Time:

10:04:00

Time On Btm: 2017.07.16 @ 06:39:30

Time Off Btm: 2017.07.16 @ 08:40:30

**TEST COMMENT:** IF-30-Weak Blow ; Built from surface to 2 1/4"  
 IS-30-No Return  
 FF-30-Weak Blow ; Built from surface to 1"  
 FS-30-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1719.21	105.50	Initial Hydro-static
1	10.92	104.46	Open To Flow (1)
30	29.14	109.42	Shut-In(1)
60	500.46	109.55	End Shut-In(1)
61	30.84	109.53	Open To Flow (2)
87	35.73	111.37	Shut-In(2)
120	348.60	112.01	End Shut-In(2)
121	1700.79	112.49	Final Hydro-static

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 WICHITA, KS

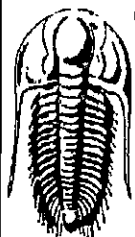
## Recovery

Length (ft)	Description	Volume (bbl)
50.00	OWCM 5%O 35%W 60%M	0.41
10.00	WMCO 20%W 30%M 50%O	0.14

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

Bollig #2-17

Job Ticket: 62990

DST#: 2

ATTN: Marc Downing

Test Start: 2017.07.16 @ 04:53:00

## GENERAL INFORMATION:

Formation: LKC "E"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:39:45

Time Test Ended: 10:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3600.00 ft (KB) To 3617.00 ft (KB) (TVD)

Total Depth: 3617.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2197.00 ft (KB)

2190.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 9120

Inside

Press@RunDepth: psig @ 3601.00 ft (KB)

Start Date: 2017.07.16

End Date:

2017.07.16

Start Time: 04:53:15

End Time:

10:04:00

Capacity: 8000.00 psig

Last Calib.: 2017.07.16

Time On Btm:

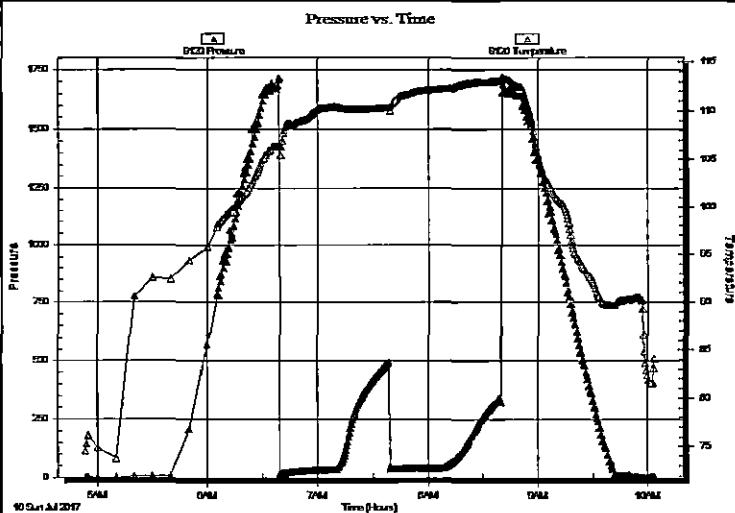
Time Off Btm:

TEST COMMENT: IF-30-Weak Blow ; Built from surface to 2 1/4"

ISI-30-No Return

FF-30-Weak Blow ; Built from surface to 1"

FSI-30-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
<p>Received KANSAS CORPORATION COMMISSION OCT 06 2017 CONSERVATION DIVISION WICHITA, KS</p>			

## Recovery

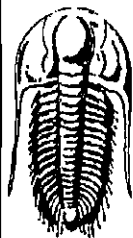
Length (ft)	Description	Volume (bbl)
50.00	OWCM 5%O 35%W 60%M	0.41
10.00	WMCO 20%W 30%M 50%O	0.14

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing Nelson Oil Co

**17-13S-21W Trego,KS**

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62990

**DST#: 2**

ATTN: Marc Downing

Test Start: 2017.07.16 @ 04:53:00

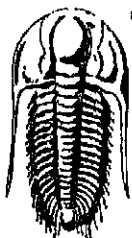
## Tool Information

Drill Pipe:	Length: 3580.00 ft	Diameter: 3.80 inches	Volume: 50.22 bbl	Tool Weight:	2000.00 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: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose:	61000.00 lb
		<u>Total Volume: 50.38 bbl</u>		Tool Chased	0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	3600.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	17.00 ft				
Tool Length:	37.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3581.00	
Shut In Tool	5.00			3586.00	
Hydraulic tool	5.00			3591.00	
Packer	5.00			3596.00	20.00 Bottom Of Top Packer
Packer	4.00			3600.00	
Stubb	1.00			3601.00	
Recorder	0.00	9120	Inside	3601.00	
Recorder	0.00	8934	Outside	3601.00	
Perforations	12.00			3613.00	
Bullnose	4.00			3617.00	17.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>37.00</b>				

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 WICHITA, KS



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62990

**DST#: 2**

ATTN: Marc Downing

Test Start: 2017.07.16 @ 04:53:00

## 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:

36000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
50.00	OWCM 5%O 35%W 60%M	0.410
10.00	WMCO 20%W 30%M 50%O	0.140

Total Length: 60.00 ft      Total Volume: 0.550 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1&1/2#LCM

RW=.119@85degrees

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WICHITA, KS

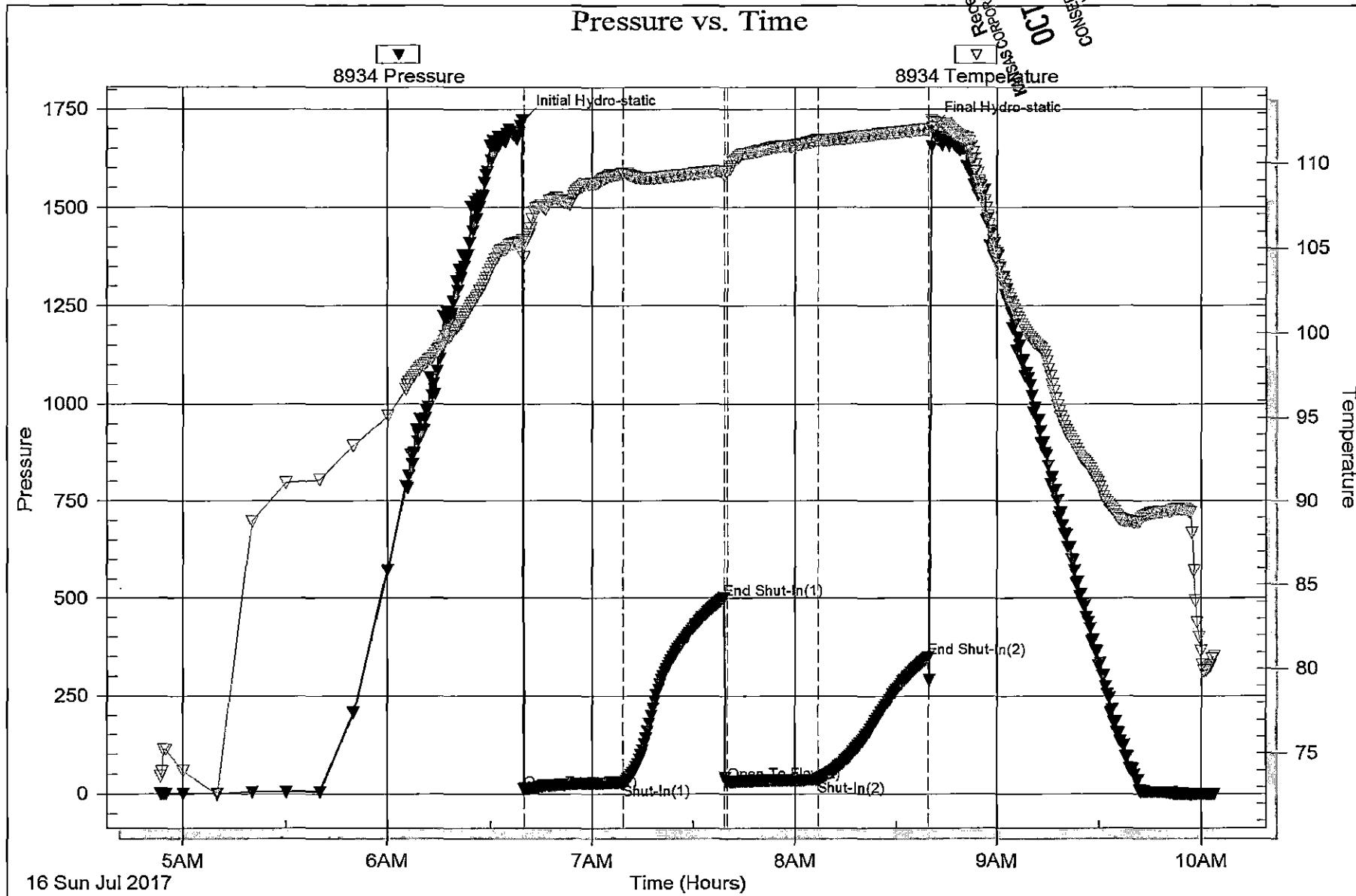
Serial #: 8934

Outside Downing Nelson Oil Co

Bollig #2-17

DST Test Number: 2

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MARTIN LUTHER KING  
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WICHITA, KS



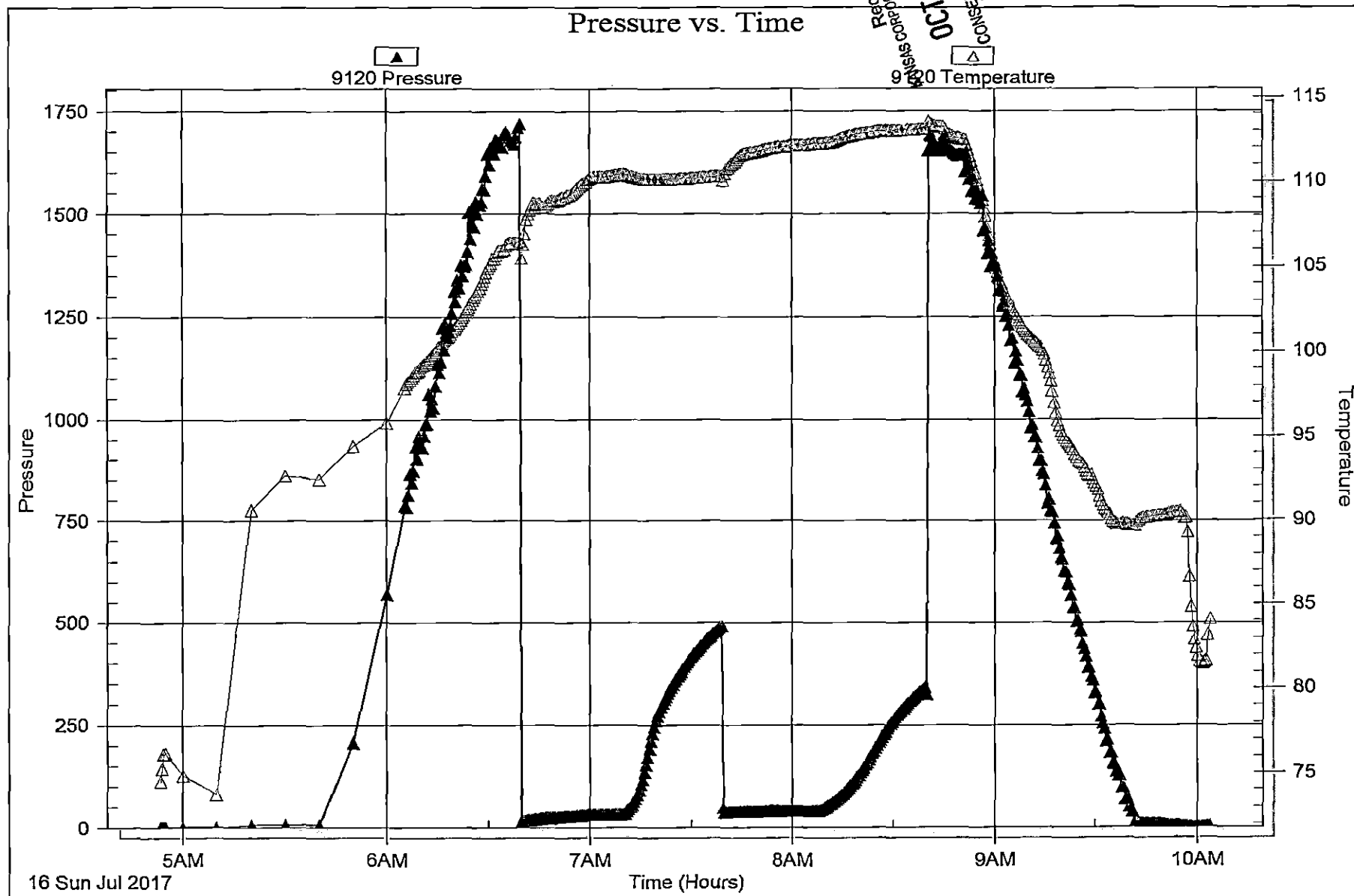
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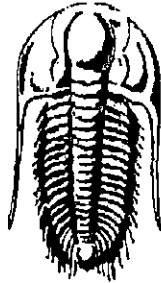
Inside Downing Nelson Oil Co

Bollig #2-17

DST Test Number: 2

NOISE/SHOCK/STRAIN  
COMMISSION RECEIVED  
2017 09 01 100





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co**

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Bollig #2-17**

**17-13S-21W Trego,KS**

Start Date: 2017.07.16 @ 22:39:00

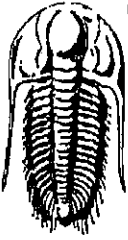
End Date: 2017.07.17 @ 04:00:00

Job Ticket #: 62991                      DST #: 3

Received  
KANSAS CORPORATION COMMISSION  
**OCT 06 2017**  
CONSERVATION DIVISION  
WICHITA, KS

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

Printed: 2017.07.19 @ 08:51:56



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62991

DST#: 3

ATTN: Marc Downing

Test Start: 2017.07.16 @ 22:39:00

### GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:26:15

Time Test Ended: 04:00:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3663.00 ft (KB) To 3734.00 ft (KB) (TVD)**

Total Depth: 3734.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2197.00 ft (KB)

2190.00 ft (CF)

KB to GR/CF: 7.00 ft

**Serial #: 8934**

**Inside**

Press@RunDepth: 12.58 psig @ 3666.00 ft (KB)

Start Date: 2017.07.16

End Date:

2017.07.17

Start Time: 22:39:15

End Time:

04:00:00

Capacity: 8000.00 psig

Last Calib.: 2017.07.17

Time On Btm: 2017.07.17 @ 00:25:45

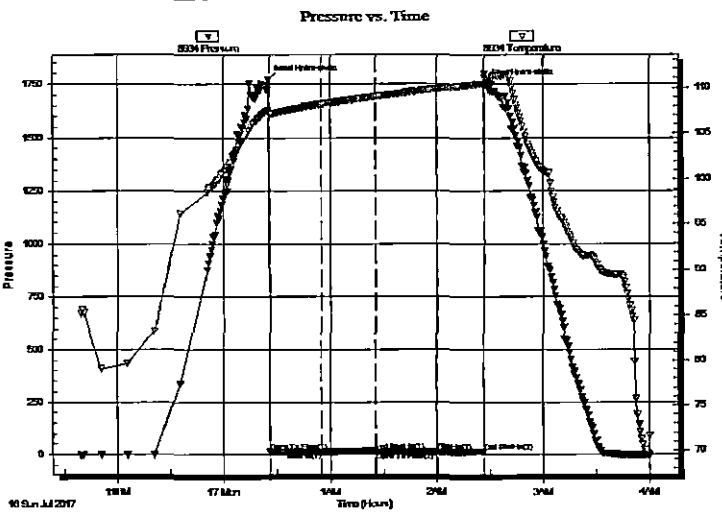
Time Off Btm: 2017.07.17 @ 02:27:15

TEST COMMENT: 30-IF-Weak 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	1768.97	107.56	Initial Hydro-static
1	12.85	107.06	Open To Flow (1)
30	12.71	108.20	Shut-In(1)
60	16.81	109.04	End Shut-In(1)
60	11.35	109.04	Open To Flow (2)
95	12.58	109.87	Shut-In(2)
121	14.67	110.43	End Shut-In(2)
122	1750.08	111.03	Final Hydro-static

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OCT 06 2017  
CONSERVATION DIVISION  
WICHITA, KS

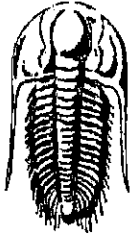
### Recovery

Length (ft)	Description	Volume (bbl)
2.00	OCM 2%O 98%M	0.01

\* Recovery from multiple tests

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

Bollig #2-17

Job Ticket: 62991

DST#: 3

ATTN: Marc Downing

Test Start: 2017.07.16 @ 22:39:00

## GENERAL INFORMATION:

Formation: LKC "H-J"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:26:15

Time Test Ended: 04:00:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3663.00 ft (KB) To 3734.00 ft (KB) (TVD)

Total Depth: 3734.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2197.00 ft (KB)

2190.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 9120

Inside

Press@RunDepth: psig @ 3666.00 ft (KB)

Start Date: 2017.07.16

End Date: 2017.07.17

Capacity: 8000.00 psig

Last Calib.: 2017.07.17

Start Time: 22:39:15

End Time: 04:00:00

Time On Btm:

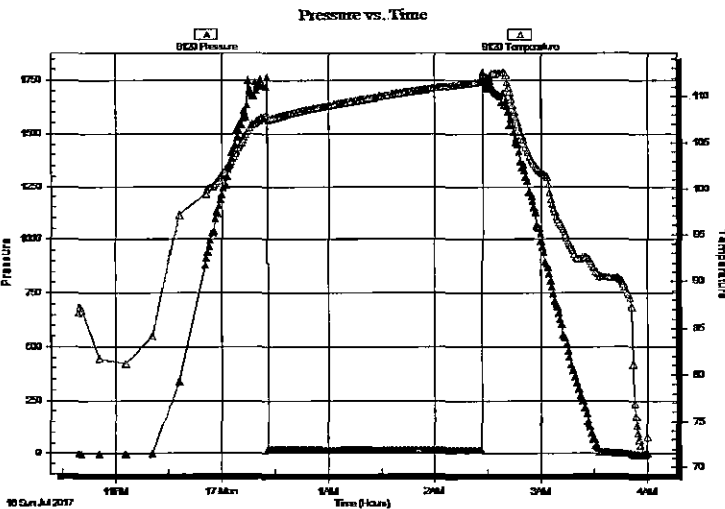
Time Off Btm:

TEST COMMENT: 30-IF-Weak 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
<p>Received KANSAS CORPORATION COMMISSION OCT 06 2017 CONSERVATION DIVISION WICHITA, KS</p>			

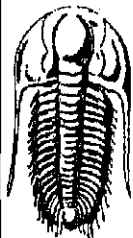
## Recovery

Length (ft)	Description	Volume (bbl)
2.00	OCM 2%O 98%M	0.01

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing Nelson Oil Co

**17-13S-21W Trego, KS**

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62991

**DST#: 3**

ATTN: Marc Downing

Test Start: 2017.07.16 @ 22:39:00

## Tool Information

Drill Pipe:	Length: 3643.00 ft	Diameter: 3.80 inches	Volume: 51.10 bbl	Tool Weight: 2000.00 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: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 60000.00 lb
		<u>Total Volume:</u>	<u>51.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	3663.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.00 ft			
Tool Length:	91.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

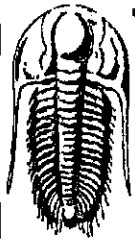
Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3644.00	
Shut In Tool	5.00			3649.00	
Hydraulic tool	5.00			3654.00	
Packer	5.00			3659.00	20.00 Bottom Of Top Packer
Packer	4.00			3663.00	
Stubb	1.00			3664.00	
Perforations	1.00			3665.00	
Change Over Sub	1.00			3666.00	
Recorder	0.00	9120	Inside	3666.00	
Recorder	0.00	8934	Inside	3666.00	
Drill Pipe	63.00			3729.00	
Change Over Sub	1.00			3730.00	
Bullnose	4.00			3734.00	71.00 Bottom Packers & Anchor

**Total Tool Length: 91.00**

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**OCT 06 2017**  
CONSERVATION DIVISION  
WICHITA, KS





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

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Downing Nelson Oil Co

**17-13S-21W Trego,KS**

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62991

**DST#: 3**

ATTN: Marc Downing

Test Start: 2017.07.16 @ 22:39:00

**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: 45.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
2.00	OCM 2%O 98%M	0.010

Total Length: 2.00 ft      Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

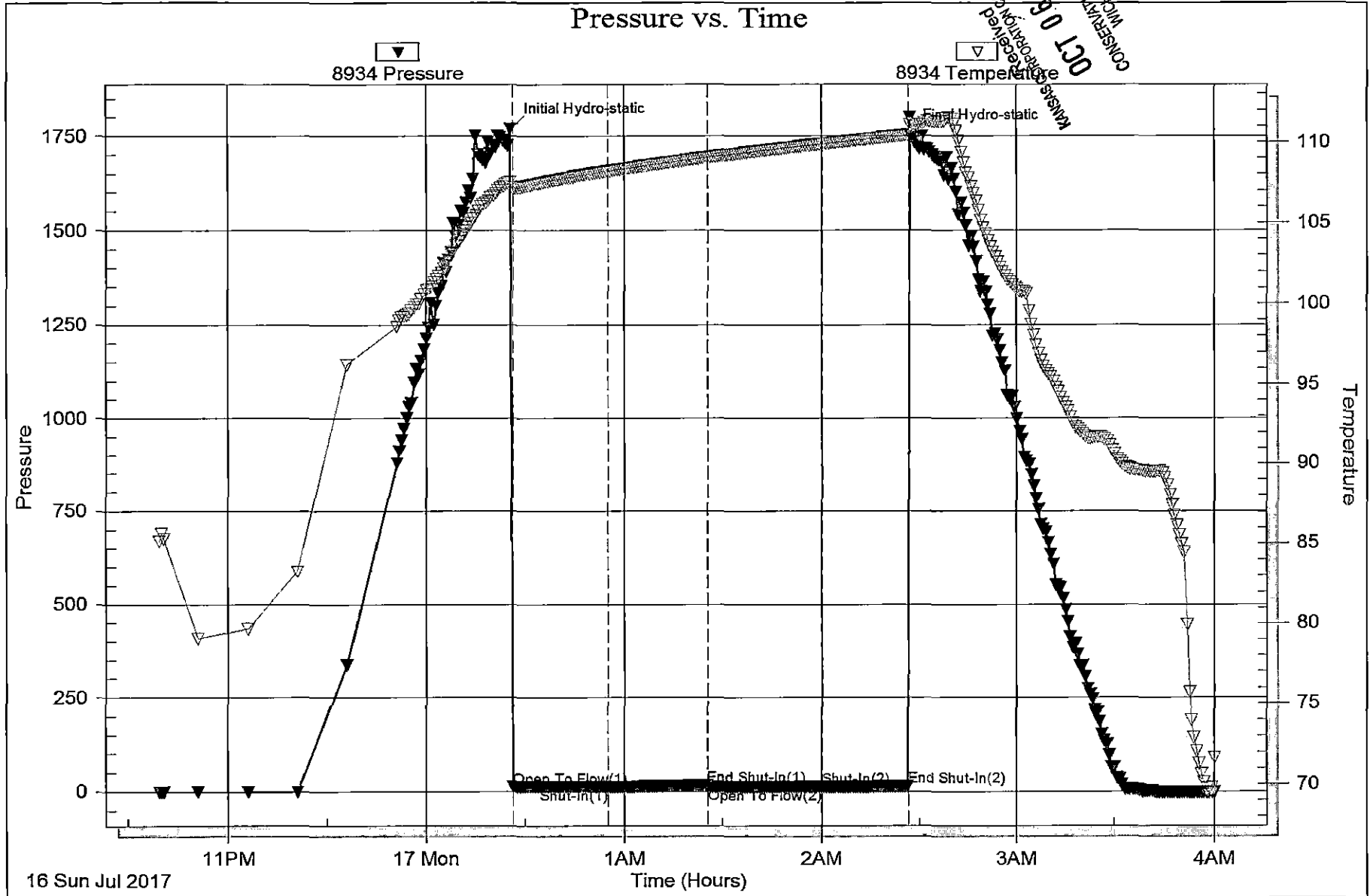
Laboratory Name:

Laboratory Location:

Recovery Comments: 1&1/2#LCM

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KANSAS CORPORATION COMMISSION  
**OCT 06 2017**  
CONSERVATION DIVISION  
WICHITA, KS

NOISW02 NOIR000000000000  
OCT 06 2017  
KANSAS  
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WICKLIFF, KS  
NOISW10 DIVISION



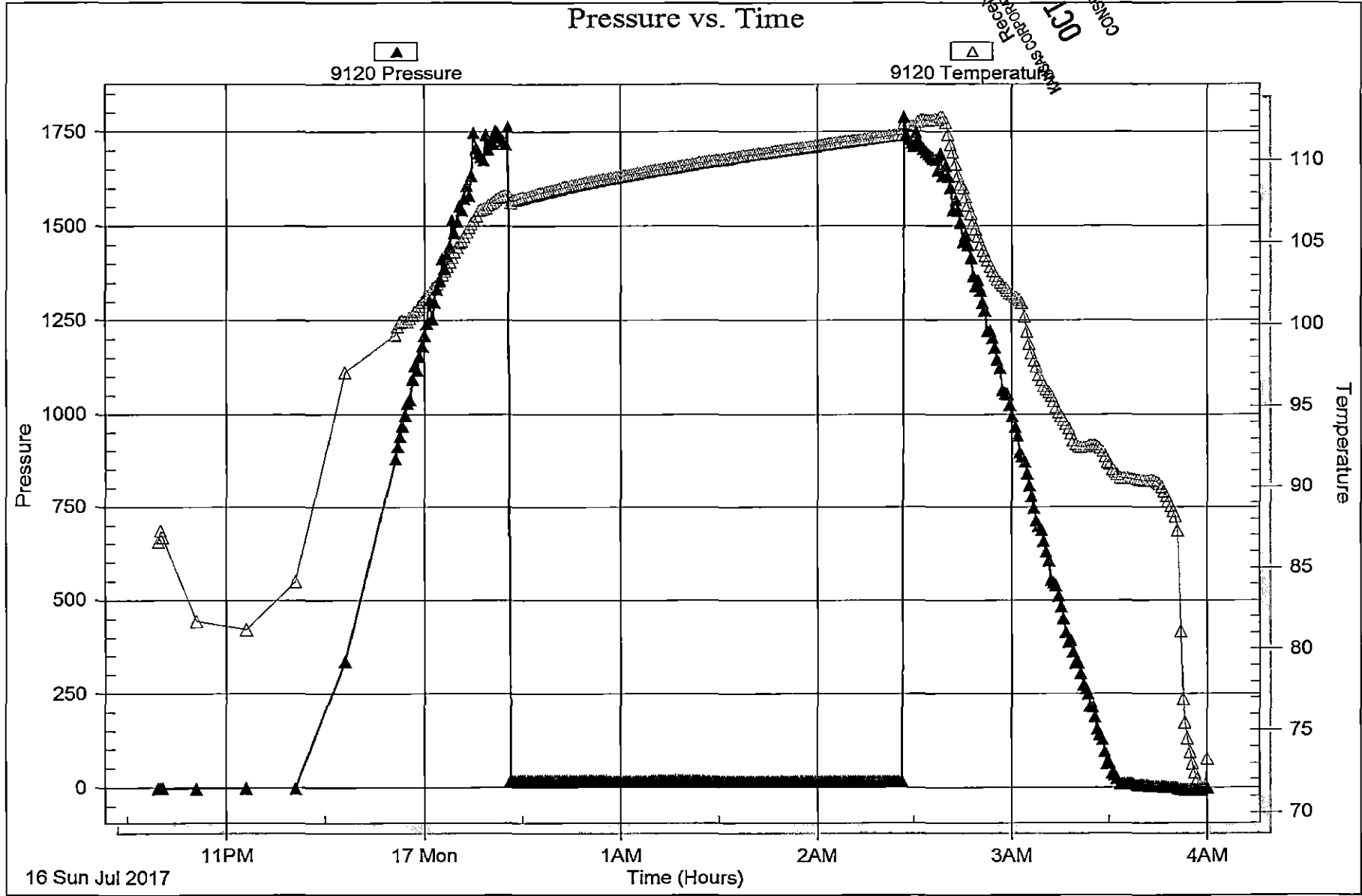
Serial #: 9120

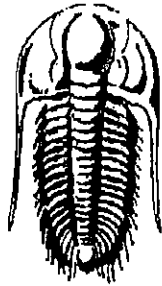
Inside Downing Nelson Oil Co

Bollig #2-17

DST Test Number: 3

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CONCRETE DIVISION  
WICHITA, KS





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

## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co**

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Bolig #2-17**

**17-13S-21W Trego,KS**

Start Date: 2017.07.17 @ 20:30:00

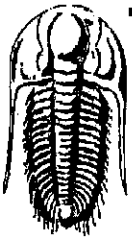
End Date: 2017.07.18 @ 03:39:15

Job Ticket #: 62992                      DST #: 4

Received  
KANSAS CORPORATION COMMISSION  
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WICHITA, KS

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

Printed: 2017.07.19 @ 08:51:28



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

Bollig #2-17

Job Ticket: 62992

DST#: 4

ATTN: Marc Downing

Test Start: 2017.07.17 @ 20:30:00

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:20:15

Time Test Ended: 03:39:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3871.00 ft (KB) To 3904.00 ft (KB) (TVD)**

Reference Elevations: 2197.00 ft (KB)

Total Depth: 3904.00 ft (KB) (TVD)

2190.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8934** Outside

Press@RunDepth: 325.72 psig @ 3873.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.07.17

End Date:

2017.07.18

Last Calib.: 2017.07.18

Start Time: 20:30:15

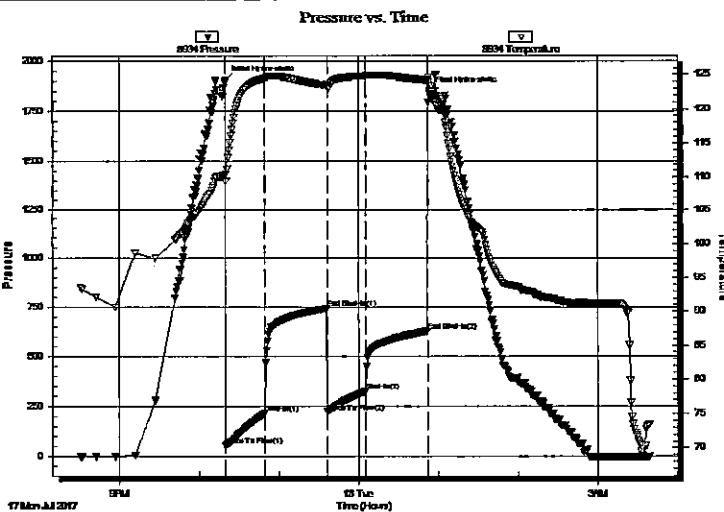
End Time:

03:39:15

Time On Btm: 2017.07.17 @ 22:20:00

Time Off Btm: 2017.07.18 @ 00:53:00

TEST COMMENT: 30-IF-Strong Blow; BOB in 2 mins  
45-ISI-Fair Blow; BOB in 30 mins  
30-FF-Strong Blow; BOB in 20 seconds  
45-FSI-Fair Blow; Built to 5"



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1900.79	110.38	Initial Hydro-static
1	56.03	109.50	Open To Flow (1)
30	215.42	124.45	Shut-In(1)
77	744.93	123.39	End Shut-In(1)
77	223.58	123.12	Open To Flow (2)
106	325.72	124.82	Shut-In(2)
152	631.10	124.22	End Shut-In(2)
153	1846.95	123.90	Final Hydro-static

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## Recovery

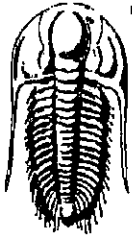
Length (ft)	Description	Volume (bbl)
120.00	GMCO 15%G 20%M 65%O	1.39
740.00	Gassy Oil 20%G 80%O	10.38
0.00	630' GIP 100%G	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Downing Nelson Oil Co  
PO Box 1019  
Hays KS 67601  
ATTN: Marc Downing

**17-13S-21W Trego,KS**  
**Bollig #2-17**  
Job Ticket: 62992      **DST#:4**  
Test Start: 2017.07.17 @ 20:30:00

**Tool Information**

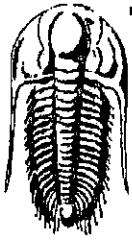
Drill Pipe:	Length: 3833.00 ft	Diameter: 3.80 inches	Volume: 53.77 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 64000.00 lb
		<u>Total Volume: 53.93 bbl</u>		Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	3871.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 ft			
Tool Length:	53.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3852.00	
Shut In Tool	5.00			3857.00	
Hydraulic tool	5.00			3862.00	
Packer	5.00			3867.00	20.00 Bottom Of Top Packer
Packer	4.00			3871.00	
Stubb	1.00			3872.00	
Perforations	1.00			3873.00	
Recorder	0.00	9120	Inside	3873.00	
Recorder	0.00	8934	Outside	3873.00	
Perforations	27.00			3900.00	
Bullnose	4.00			3904.00	33.00 Bottom Packers & Anchor

**Total Tool Length: 53.00**

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WICHITA, KS



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Downing Nelson Oil Co

**17-13S-21W Trego,KS**

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62992

**DST#: 4**

ATTN: Marc Downing

Test Start: 2017.07.17 @ 20:30:00

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
120.00	GMCO 15%G 20%M 65%O	1.392
740.00	Gassy Oil 20%G 80%O	10.380
0.00	630' GIP 100%G	0.000

Total Length: 860.00 ft      Total Volume: 11.772 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

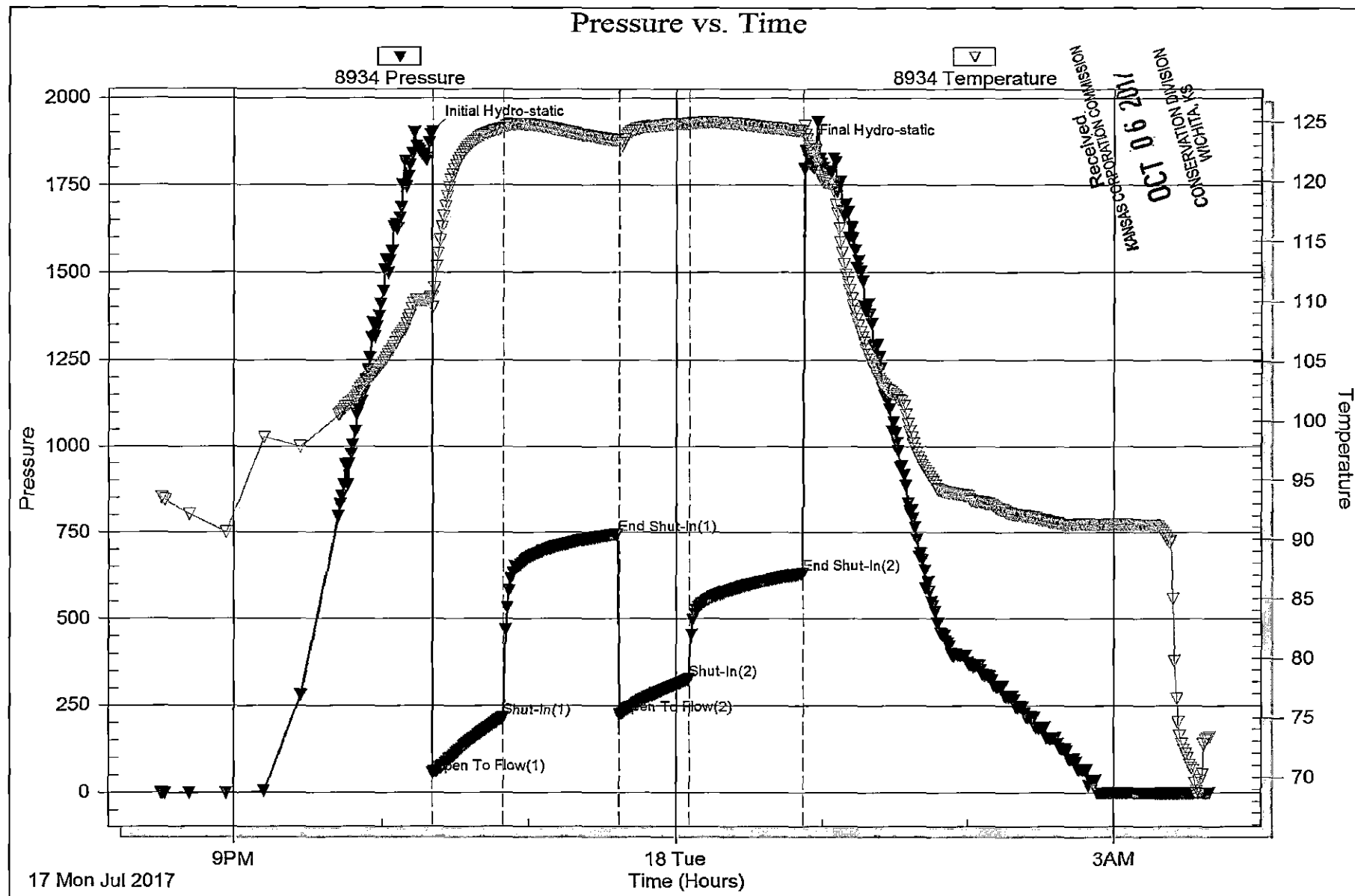
Laboratory Name:

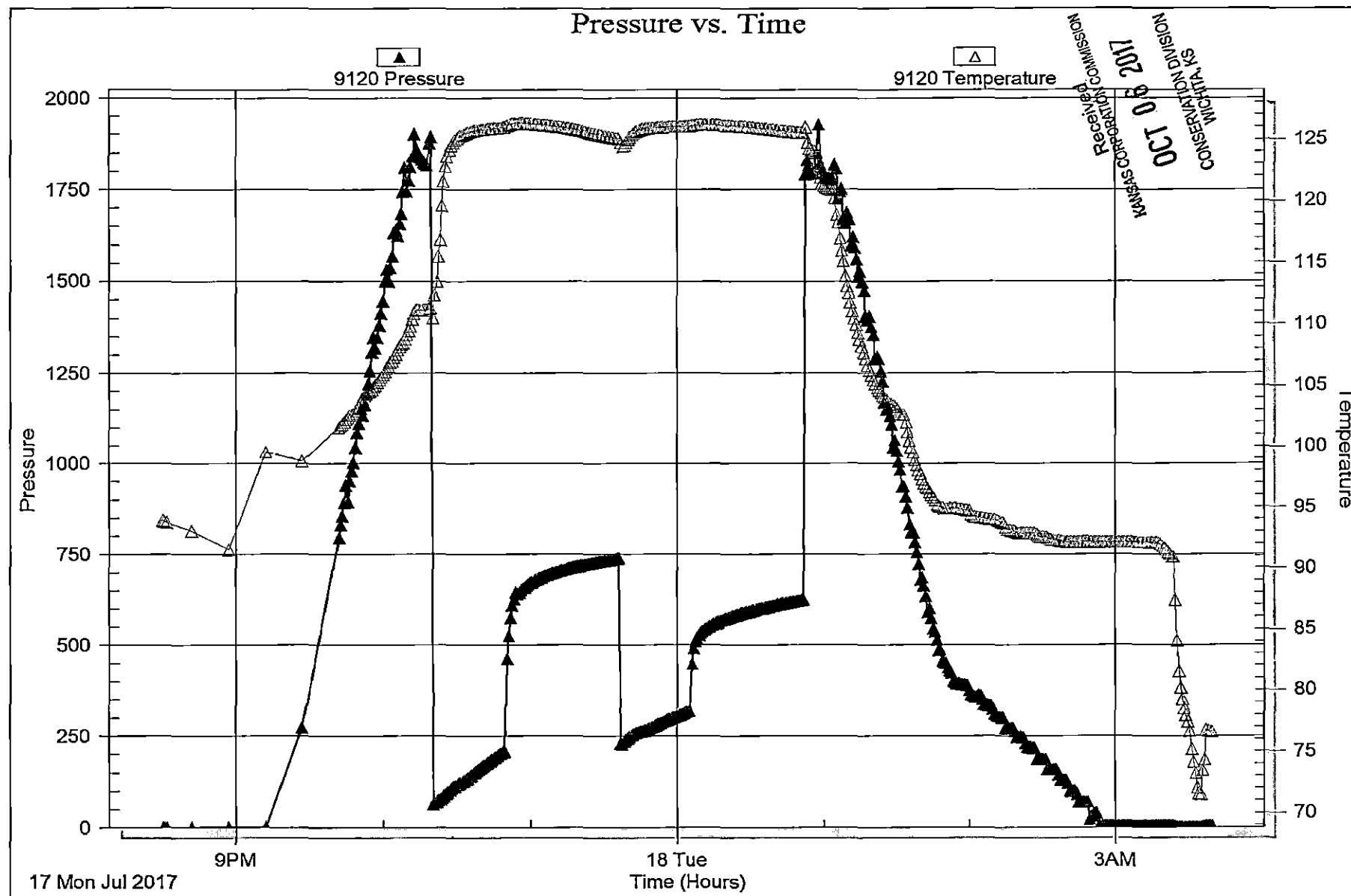
Laboratory Location:

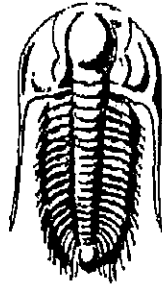
Recovery Comments: 1&1/2#LCM

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WICHITA, KS









**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co**

PO Box 1019  
Hays KS 67601

ATTN: Marc Downing

**Bollig #2-17**

**17-13S-21W Trego,KS**

Start Date: 2017.07.18 @ 12:53:00

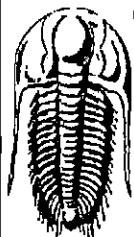
End Date: 2017.07.18 @ 19:18:30

Job Ticket #: 62993                      DST #: 5

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

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**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

Bollig #2-17

Job Ticket: 62993

DST#: 5

ATTN: Marc Downing

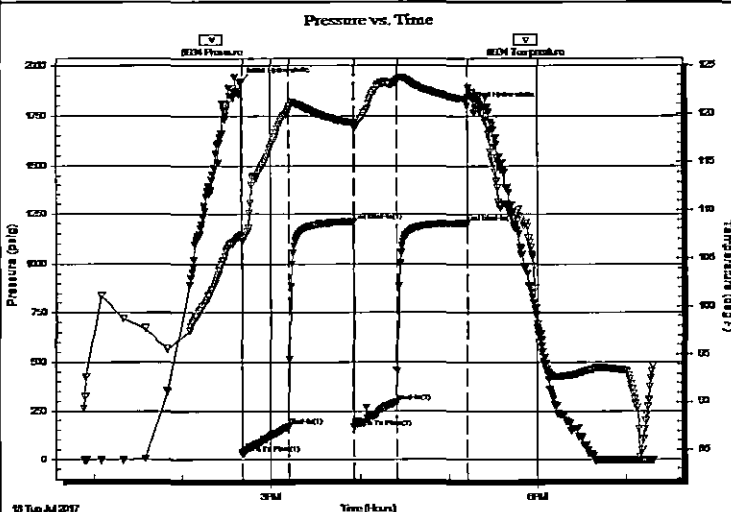
Test Start: 2017.07.18 @ 12:53:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:40:45  
 Time Test Ended: 19:18:30  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J. Staab  
 Unit No: 84  
 Interval: **3898.00 ft (KB) To 3970.00 ft (KB) (TVD)**  
 Total Depth: 3970.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Reference Elevations: 2197.00 ft (KB)  
 2190.00 ft (CF)  
 KB to GR/CF: 7.00 ft

**Serial #: 8934** Inside  
 Press@RunDepth: 295.46 psig @ 3902.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.07.18 End Date: 2017.07.18 Last Calib.: 2017.07.18  
 Start Time: 12:53:15 End Time: 19:18:30 Time On Btm: 2017.07.18 @ 14:40:15  
 Time Off Btm: 2017.07.18 @ 17:12:30

**TEST COMMENT:** 30-IF-Fair Blow; BOB in 10 mins  
 45-ISI-Weak Blow; Built to 1/4"; Died 25 mins in  
 30-FF-Fair Blow; BOB in 11 mins  
 45-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1922.75	107.37	Initial Hydro-static
1	31.39	106.78	Open To Flow (1)
32	171.20	120.50	Shut-In(1)
76	1209.09	118.99	End Shut-In(1)
76	164.49	118.66	Open To Flow (2)
105	295.46	123.37	Shut-In(2)
152	1203.84	121.45	End Shut-In(2)
153	1801.68	121.67	Final Hydro-static

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## Recovery

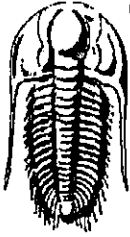
Length (ft)	Description	Volume (bbl)
120.00	GCWM 10%G 40%W 50%M	1.39
290.00	GWCM 10%G 10%W 80%M	4.07
120.00	WCM 10%W 90%M	1.68
10.00	OCM 5%O 95%M	0.14
0.00	60' GIP 100%G	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Downing Nelson Oil Co

**17-13S-21W Trego,KS**

PO Box 1019  
Hays KS 67601

**Bollig #2-17**

Job Ticket: 62993

**DST#: 5**

ATTN: Marc Downing

Test Start: 2017.07.18 @ 12:53:00

### Tool Information

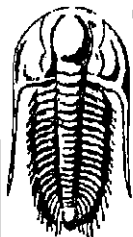
Drill Pipe:	Length: 3864.00 ft	Diameter: 3.80 inches	Volume: 54.20 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 35000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 54.36 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 63000.00 lb
Depth to Top Packer:	3898.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	72.00 ft			
Tool Length:	92.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3879.00	
Shut In Tool	5.00			3884.00	
Hydraulic tool	5.00			3889.00	
Packer	5.00			3894.00	20.00 Bottom Of Top Packer
Packer	4.00			3898.00	
Stubb	1.00			3899.00	
Perforations	2.00			3901.00	
Change Over Sub	1.00			3902.00	
Recorder	0.00	9120	Inside	3902.00	
Recorder	0.00	8934	Inside	3902.00	
Drill Pipe	63.00			3965.00	
Change Over Sub	1.00			3966.00	
Bullnose	4.00			3970.00	72.00 Bottom Packers & Anchor

**Total Tool Length: 92.00**

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**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Downing Nelson Oil Co

17-13S-21W Trego, KS

PO Box 1019  
Hays KS 67601

Bollig #2-17

Job Ticket: 62993

DST#: 5

ATTN: Marc Downing

Test Start: 2017.07.18 @ 12:53:00

## 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:

7600 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	GCWM 10%G 40%W 50%M	1.392
290.00	GWCM 10%G 10%W 80%M	4.068
120.00	WCM 10%W 90%M	1.683
10.00	OCM 5%O 95%M	0.140
0.00	60' GIP 100%G	0.000

Total Length: 540.00 ft

Total Volume: 7.283 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

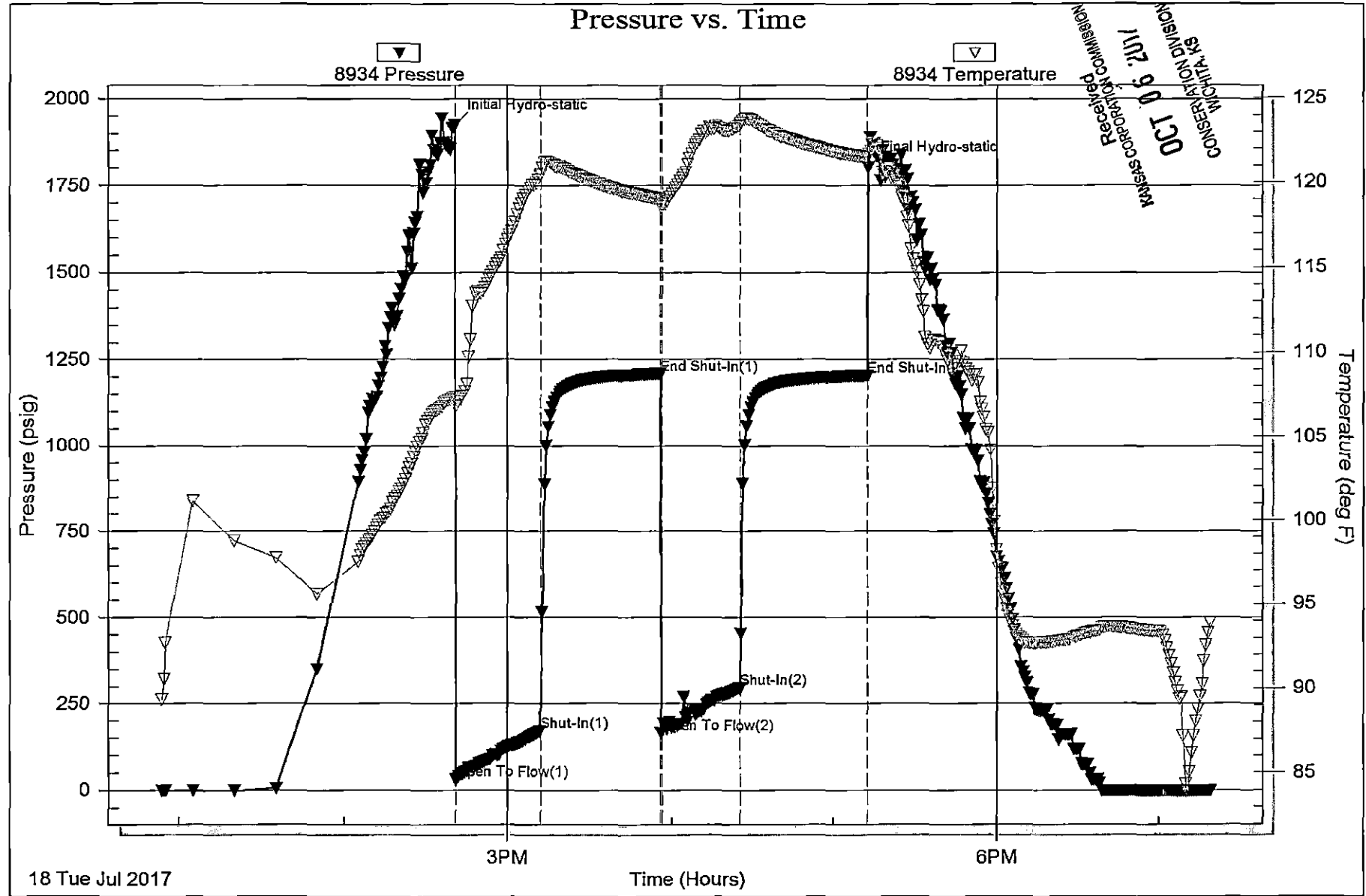
Laboratory Name:

Laboratory Location:

Recovery Comments: 1#LCM

RW=.256@98degrees

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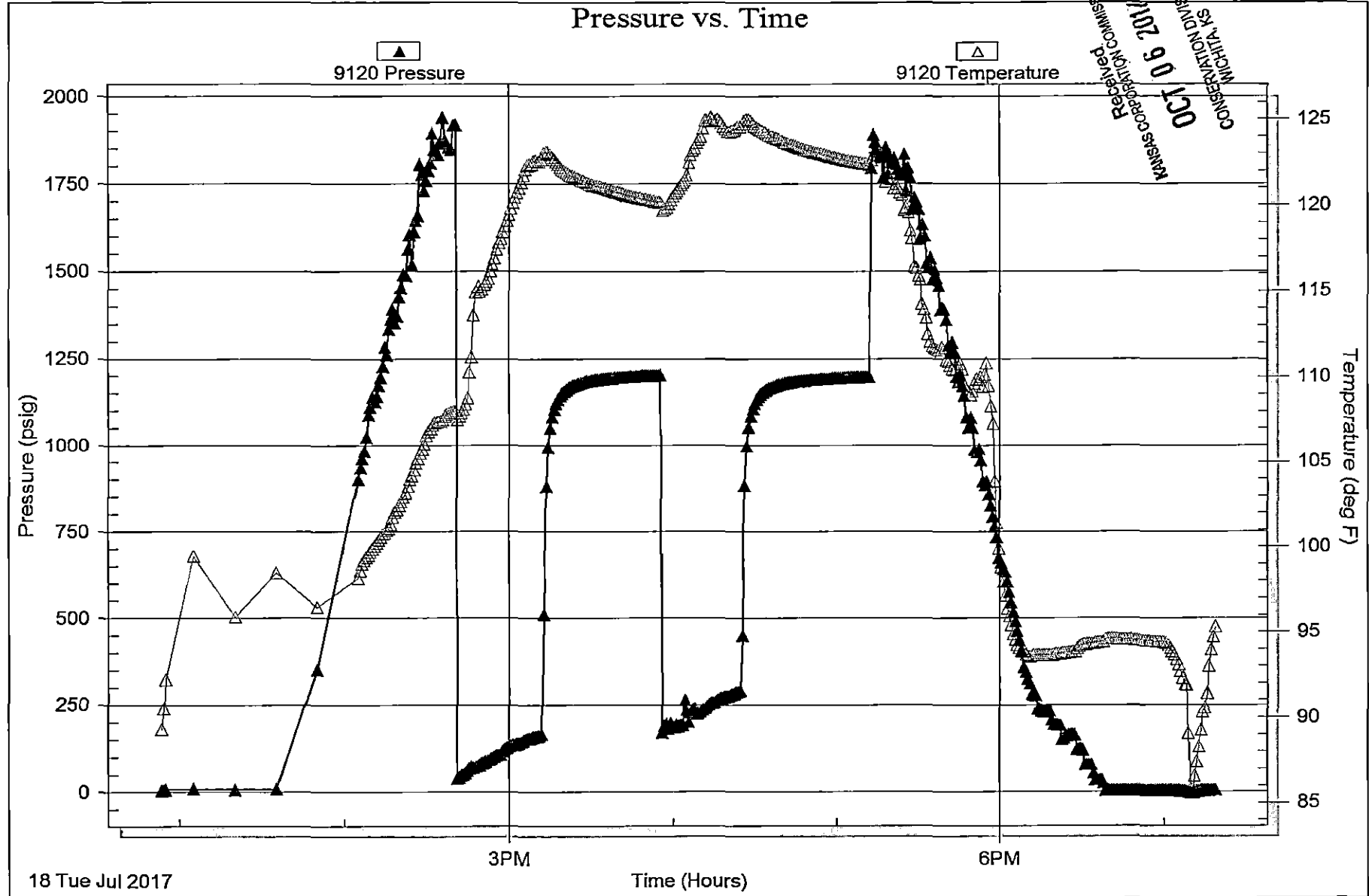


Serial #: 9120

Inside Dow ning Nelson Oil Co

Ballig #2-17

DST Test Number: 5



TEST TICKET

Commerce Parkway • Hays, Kansas 67601

NO. 62989

Well Name & No. Bollig # 2-17 Test No. 1 Date 07/15/2017  
 Company DNOGL Elevation 2197 KB 2190 GL  
 Address PO BOX 1019 Hays, KS 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery #4  
 Location: Sec. 17 Twp. 13s Rge. 21w Co. Trego State Ks

Interval Tested 3560' - 3585' Zone Tested LHC "C"  
 Anchor Length 25' Drill Pipe Run - Mud Wt. 8.8  
 Top Packer Depth 3555' Drill Collars Run 32' Vis 55  
 Bottom Packer Depth 3560' Wt. Pipe Run - WL 8  
 Total Depth 3585' Chlorides 2500 ppm System LCM 1 1/2#

Blow Description 77- Fair Blow; BOB in 25 mins  
150- Weak Blow; Surface Blow throughout  
77- Fair Blow; BOB in 13 mins  
75- Weak Surface Blow throughout

Rec	Feet of	%gas	%oil	%water	%mud
100'	MCO	60		40	
	350' JOP	100			

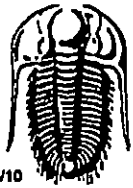
Rec Total 100' BHT 114° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1691  Test 1050 T-On Location 14:00  
 (B) First Initial Flow 13  Jars - T-Started 14:50  
 (C) First Final Flow 34  Safety Joint - T-Open 16:48  
 (D) Initial Shut-In 951  Circ Sub - T-Pulled 19:48  
 (E) Second Initial Flow 33  Hourly Standby - T-Out 21:22  
 (F) Second Final Flow 50  Mileage 56 R 7 42 Comments -  
 (G) Final Shut-In 884  Sampler -  
 (H) Final Hydrostatic 1679  Straddle -  
 Ruined Shale Packer -  
 Ruined Packer -  
 Extra Copies -

Initial Open 45  Shale Packer -  
 Initial Shut-In 45  Extra Packer -  
 Final Flow 45  Extra Recorder -  
 Final Shut-In 45  Day Standby -  
 Accessibility - Sub Total 1092 MP/DST Disc't -

Approved By \_\_\_\_\_ Our Representative Spencer J. Frank Thanks  
 Triblette 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.  
 785-259-0056

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 CONSERVATION DIVISION  
 WICHITA, KS



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62990

Well Name & No. Bollig #2-17 Test No. 2 Date 07/16/2017  
 Company B.N.O.C.I. Elevation 2197 KB 2190 GL  
 Address PO BOX 1019 Hays Ks 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery #4  
 Location: Sec. 17 Twp. 13s Rge. 21st Co. Trego State Ks

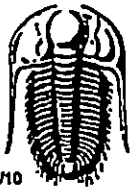
Interval Tested 3600' - 3617' Zone Tested LHC "E"  
 Anchor Length 17' Drill Pipe Run 3580' Mud Wt. 8.8  
 Top Packer Depth 3595' Drill Collars Run 32' Vis 55  
 Bottom Packer Depth 3600' Wt. Pipe Run - WL 8  
 Total Depth 3617' Chlorides 2,500 ppm System LCM 1 1/2 #

Blow Description 67-Weak Blow; Built from surface to 2 1/4"  
68-No Return  
77-Weak Blow; Built from surface to 1"  
78-No Return

Rec	Feet of	%gas	%oil	%water	%mud
50'	09WCM	5	35	60	
10'	9WMC0	50	20	30	

Rec Total 60' BHT 112° Gravity - API RW 119 @ 85 °F Chlorides 36,000 ppm  
 (A) Initial Hydrostatic 1719  Test 1050 T-On Location 04:18  
 (B) First Initial Flow 10  Jars \_\_\_\_\_ T-Started 04:53  
 (C) First Final Flow 29  Safety Joint \_\_\_\_\_ T-Open 06:38  
 (D) Initial Shut-In 500  Circ Sub \_\_\_\_\_ T-Pulled 08:38  
 (E) Second Initial Flow 30  Hourly Standby \_\_\_\_\_ T-Out 10:02  
 (F) Second Final Flow 35  Mileage 5687 42 Comments \_\_\_\_\_  
 (G) Final Shut-In 348  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1700  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Packer \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Extra Recorder \_\_\_\_\_ Total 1092  
 Final Flow 30  Day Standby \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30  Accessibility \_\_\_\_\_  
 Sub Total 1092

Approved By \_\_\_\_\_ Our Representative Spencer J. Straub Thanks!  
 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.  
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 WICHITA, KS



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62991

Well Name & No. Bollig #2-17 Test No. 3 Date 07/16/2017  
 Company ONOC Elevation 2197 KB 2190 GL  
 Address PO BOX 1019 Hays Ks 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery #4  
 Location: Sec. 17 Twp. 13N Rge. 21W Co. Trego State Ks

Interval Tested 3663' - 3734' Zone Tested LHC "H-J"  
 Anchor Length 71' Drill Pipe Run 3643' Mud Wt. 9  
 Top Packer Depth 3658' Drill Collars Run 32' Vis 45  
 Bottom Packer Depth 3663' Wt. Pipe Run - WL 8  
 Total Depth 3734' Chlorides 3,000 ppm System LCM 1 1/2 #

Blow Description 77-Weak Blow; Built to 1/4"  
75D - No Return  
77 - No Blow  
75D - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</u>	<u>OCM</u>	<u>2</u>	<u>2</u>	<u>98</u>	<u></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

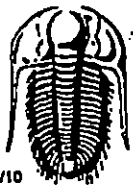
Rec Total 2' BHT 111° Gravity - API RW - @ - F Chlorides - ppm

(A) Initial Hydrostatic 1768  Test 1050 T-On Location 22:11  
 (B) First Initial Flow 12  Jars  T-Started 22:39  
 (C) First Final Flow 12  Safety Joint  T-Open 00:25 07/17/2017  
 (D) Initial Shut-In 16  Circ Sub  T-Pulled 02:30  
 (E) Second Initial Flow 11  Hourly Standby  T-Out 03:58  
 (F) Second Final Flow 12  Mileage 5627 42  
 (G) Final Shut-In 14  Sampler   
 (H) Final Hydrostatic 1750  Straddle   
 Shale Packer   
 Extra Packer   
 Extra Recorder   
 Day Standby   
 Accessibility

Initial Open 30  
 Initial Shut-In 30  
 Final Flow 30  
 Final Shut-In 30  
 Sub Total 1092  
 Total 1092  
 MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative James J. Stank Thank  
 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.

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 CONSERVATION DIVISION  
 WICHITA, KS



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

62992

NO.

Well Name & No. Bolig #2-17 Test No. 4 Date 07/17/2017  
 Company DMCO Elevation 2197 KB 2190 GL  
 Address PO BOX 1019 Hays Ks 67601  
 Co. Rep / Geo. Marc Downing Flg Discovery #4  
 Location: Sec. 17 Twp. 13s Rge. 2W Co. Trego State Ks

Interval Tested 3871' - 3904' Zone Tested Marmaton  
 Anchor Length 33' Drill Pipe Run 3833' Mud Wt. 9  
 Top Packer Depth 3866' Drill Collars Run 32' Vis 51  
 Bottom Packer Depth 3871' Wt. Pipe Run - WL 8.8  
 Total Depth 3904' Chlorides 5,000 ppm System LCM 1 1/2#

Blow Description 77- Strong Blow; BOB in 2 mins  
78- Fair Blow; BOB in 30 mins  
77- Strong Blow; BOB in 20 seconds  
78- Fair Blow; ~~BOB~~ Built to 5"

Rec	Feet of	%gas	%oil	%water	%mud
<u>740'</u>	<u>Heavy Oil</u>	<u>20</u>	<u>80</u>		
<u>120'</u>	<u>DMCO</u>	<u>15</u>	<u>65</u>		<u>20</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

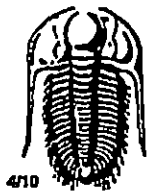
Rec Total 860' BHT 124° Gravity 37° API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1900  Test 1050 T-On Location 19:50  
 (B) First Initial Flow 56  Jars \_\_\_\_\_ T-Started 20:30  
 (C) First Final Flow 215  Safety Joint \_\_\_\_\_ T-Open 22:19  
 (D) Initial Shut-In 744  Circ Sub \_\_\_\_\_ T-Pulled 00:50 07/18/2017  
 (E) Second Initial Flow 223  Hourly Standby \_\_\_\_\_ T-Out 03:37  
 (F) Second Final Flow 325  Mileage 5687 42 Comments \_\_\_\_\_  
 (G) Final Shut-In 631  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1846  Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 45  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Copies \_\_\_\_\_  
 Final Shut-In 45  Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total 0  
 Accessibility \_\_\_\_\_ Total 1092  
 Sub Total 1092 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative James J. Jacobs Thanks  
 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.  
 705 256 2222

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 OCT 06 2017  
 CONSERVATION DIVISION  
 WICHITA, KS



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

62993

NO.

Well Name & No. Bolly #2-17 Test No. 5 Date 07/13/2017  
 Company DNOCJ Elevation 2197 KB 2190 GL  
 Address PO BOX 1019 Hays Mo 67601  
 Co. Rep / Geo. Marc Downing Rig Discovery #4  
 Location: Sec. 17 Twp. 13 Rge. 21st Co. Trego State Mo

Interval Tested 3898'-3970' Zone Tested Ashuckle  
 Anchor Length 72' Drill Pipe Run 3864' Mud Wt. 8.9  
 Top Packer Depth 3893' Drill Collars Run 32' Vis 53  
 Bottom Packer Depth 3898' Wt. Pipe Run - WL 9.2  
 Total Depth 3970' Chlorides 5,000 ppm System LCM 1#

Blow Description 77- Fair Blow; BOB in 10 mins  
75D- Weak Blow; Built to 1/4"; Died 25 mins  
77- Fair Blow; BOB in 11 mins  
75D- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>OCM</u>		<u>5</u>	<u>95</u>	
<u>120'</u>	<u>WCM</u>			<u>90</u>	
<u>290'</u>	<u>1WCM</u>	<u>10</u>	<u>10</u>	<u>80</u>	
<u>120'</u>	<u>1WCM</u>	<u>10</u>	<u>40</u>	<u>50</u>	
<u>60'</u>	<u>2HP</u>	<u>100</u>			

Rec Total 540' BHT 121° Gravity - API RW 256 @ 98° F Chlorides 7,600 ppm

(A) Initial Hydrostatic 1922  Test 1050 T-On Location 12:30  
 (B) First Initial Flow 31  Jars \_\_\_\_\_ T-Started 12:53  
 (C) First Final Flow 171  Safety Joint \_\_\_\_\_ T-Open 14:40  
 (D) Initial Shut-In 1209  Circ Sub \_\_\_\_\_ T-Pulled 17:10  
 (E) Second Initial Flow 164  Hourly Standby \_\_\_\_\_ T-Out 19:16  
 (F) Second Final Flow 29.5  Mileage 5627 42 Comments \_\_\_\_\_  
 (G) Final Shut-In 1203  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1801  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1092 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Spencer J. Stahl Thank

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