



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1311661
OIL & GAS CONSERVATION DIVISION

Form ACO-1
August 2013

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

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

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 #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ 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: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

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.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1311661

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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. 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 type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input 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

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 <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
---	--

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	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 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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Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	Deutscher-Schoenthaler Unit 1-3
Doc ID	1311661

Tops

Name	Top	Datum
Top Anhydrite	1564'	+641
Base Anhydrite	1605'	+600
Topeka	3225'	-1020
Heebner	3454'	-1249
Toronto	3474'	-1269
LKC	3488'	-1283
BKC	3724'	-1519
Marmaton	3790'	-1585
Cherokee Shale	3826'	-1621
Arbuckle	3850'	-1645

CUSTOMER Downing & Nelson

WELL NO. 1-3

LEASE Dretcher-Schoenthal

JOB TYPE Cement Surface

TICKET NO. 29540

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	700							On location
								8 5/8 CSG RTD - 200 221 CSG - 220
	715							START Running CSG Break Circ on Bottom
	945	4.5	0				200	START CMT
	955	4.5	36				100	End CMT - CMT circulating
	955	4.5	0				100	Start Disp
	1000	4.5	13				200	End Disp * 50 SKS TO PIT *
								Thanks David Jon & Isaac

SWIFT Services, Inc.

DATE 7-4-16 PAGE NO.

TICKET NO. 29541

Wing & Nelson

WELL NO. # 1-3

LEASE Deutscher - Schoen Thaler

JOB TYPE 2 stage long string

TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
			T	C	TUBING	CASING	
730							On location w/ Float Equip
							14# 5 1/2 csg RTD - 3930'
							Total pipe - 3928 Baffle @ 3907
							D.V. Tool - 15 1/2' on H 60 Centralizers - 1, 3, 5, 7, 9, 11, 59 Basket - 60
900							Start Running Csg / Float Equip
1030							Break Circ on Bottom
1130		12			300		pump mud flush
		20			300		pump Kcl spacer
1140		36			200		pump Cmt - 150 sks EA-2 @ 15.5 ppq
1155	7	0			0		Drop 1st plug / wash P&L
	7	70			300		Start Disp
1215	5.5	95			600		Catch Cmt land plug lift psi - 600 land psi - 1300
1220							Drop D.V. bomb
1225							open Dv tool and Circ while waiting for water
100							Plug Rat hole - 30 sks SMD cmt
105							Plug Mouse Hole - 15 sks SMD cmt
110	6	0			200		START CMT
140	2.5	80			0		End Cmt
		0			200		Drop plug START Disp - Hard to Disp w/ Mud pump b/c with pump on Rig broke down
145		38			1300		End Disp - Hook back up to pump trk to psi up lift - 300 land - 1300 35 sks Circ to pit



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

3-13s-21w Trego,KS

Deutscher- Schoenthaler #1-3

Start Date: 2016.06.29 @ 15:04:34

End Date: 2016.06.30 @ 00:18:04

Job Ticket #: 58095 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.07.05 @ 08:46:19

Downing- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

3-13s-21w Trego,KS

DST # 1

LKC "C&D"

2016.06.29



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 58095

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.06.29 @ 15:04:34

GENERAL INFORMATION:

Formation: **LKC "C&D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:09:34

Time Test Ended: 00:18:04

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3507.00 ft (KB) To 3552.00 ft (KB) (TVD)

Reference Elevations: 2203.00 ft (KB)

Total Depth: 3552.00 ft (KB) (TVD)

2195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6651

Inside

Press@RunDepth: 127.38 psig @ 3516.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.06.29

End Date:

2016.06.30

Last Calib.: 2016.06.30

Start Time: 15:04:35

End Time:

00:18:04

Time On Btm: 2016.06.29 @ 18:08:34

Time Off Btm: 2016.06.29 @ 21:11:04

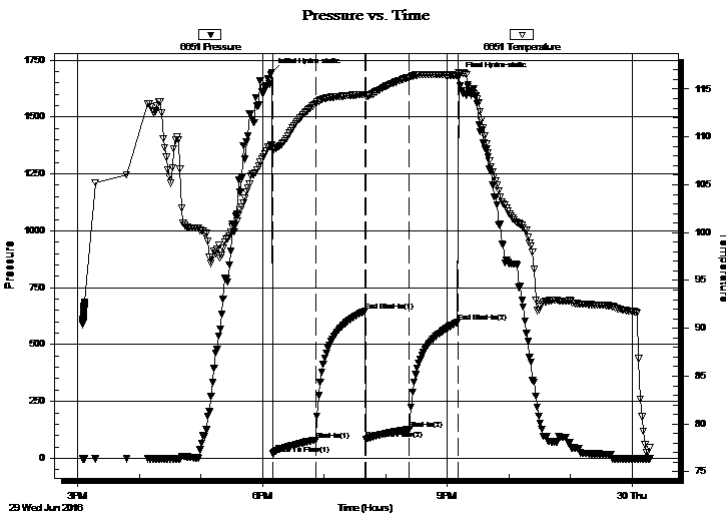
TEST COMMENT: 45- IF- Slow ly built to 7 1/2"

45- IS- No blow

45- FF- Slow ly built to 4"

45- FS- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1696.35	109.12	Initial Hydro-static
1	19.18	108.69	Open To Flow (1)
43	80.64	113.46	Shut-In(1)
92	648.74	114.43	End Shut-In(1)
93	85.14	114.26	Open To Flow (2)
135	127.38	116.23	Shut-In(2)
182	597.81	116.42	End Shut-In(2)
183	1676.62	116.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
218.00	MW, 25%M 75%W	1.60
1.00	CO	0.01

Gas Rates

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



DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 58095 **DST#: 1**

ATTN: Marc Dow ning

Test Start: 2016.06.29 @ 15:04:34

GENERAL INFORMATION:

Formation: **LKC "C&D"**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Initial)

Time Tool Opened: 18:09:34

Tester: Brannan Lonsdale

Time Test Ended: 00:18:04

Unit No: 73

Interval: 3507.00 ft (KB) To 3552.00 ft (KB) (TVD)

Reference Elevations: 2203.00 ft (KB)

Total Depth: 3552.00 ft (KB) (TVD)

2195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6839 Outside

Press@RunDepth: psig @ 3516.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.06.29

End Date:

2016.06.30

Last Calib.:

2016.06.30

Start Time: 15:04:17

End Time:

00:17:46

Time On Btm:

Time Off Btm:

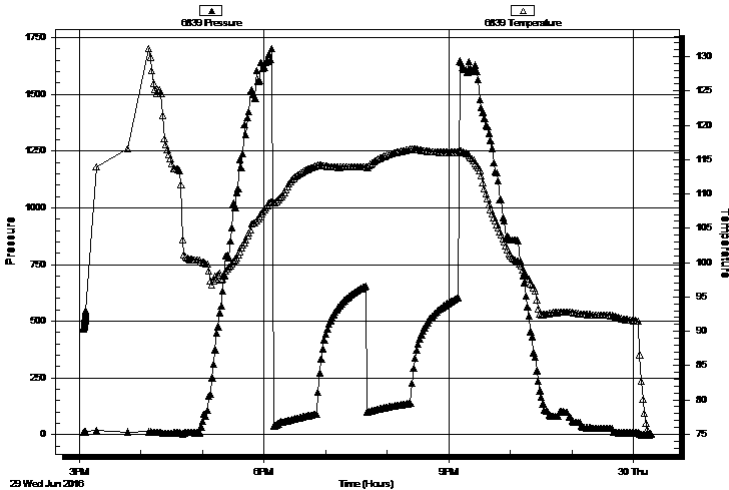
TEST COMMENT: 45- IF- Slow ly built to 7 1/2"

45- IS- No blow

45- FF- Slow ly built to 4"

45- FS- No blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
218.00	MW, 25%M 75%W	1.60
1.00	CO	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 58095

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.06.29 @ 15:04:34

Tool Information

Drill Pipe:	Length: 3189.00 ft	Diameter: 3.82 inches	Volume: 45.21 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 311.00 ft	Diameter: 2.75 inches	Volume: 2.28 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 47.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3507.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3488.00	
Shut In Tool	5.00			3493.00	
Hydraulic tool	5.00			3498.00	
Packer	5.00			3503.00	20.00 Bottom Of Top Packer
Packer	4.00			3507.00	
Stubb	1.00			3508.00	
Perforations	8.00			3516.00	
Recorder	0.00	6651	Inside	3516.00	
Recorder	0.00	6839	Outside	3516.00	
Change Over Sub	1.00			3517.00	
Drill Pipe	31.00			3548.00	
Change Over Sub	1.00			3549.00	
Bullnose	3.00			3552.00	45.00 Bottom Packers & Anchor

Total Tool Length: 65.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 58095

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.06.29 @ 15:04:34

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:

85000 ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.70 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
218.00	MW, 25%M 75%W	1.602
1.00	CO	0.007

Total Length: 219.00 ft

Total Volume: 1.609 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

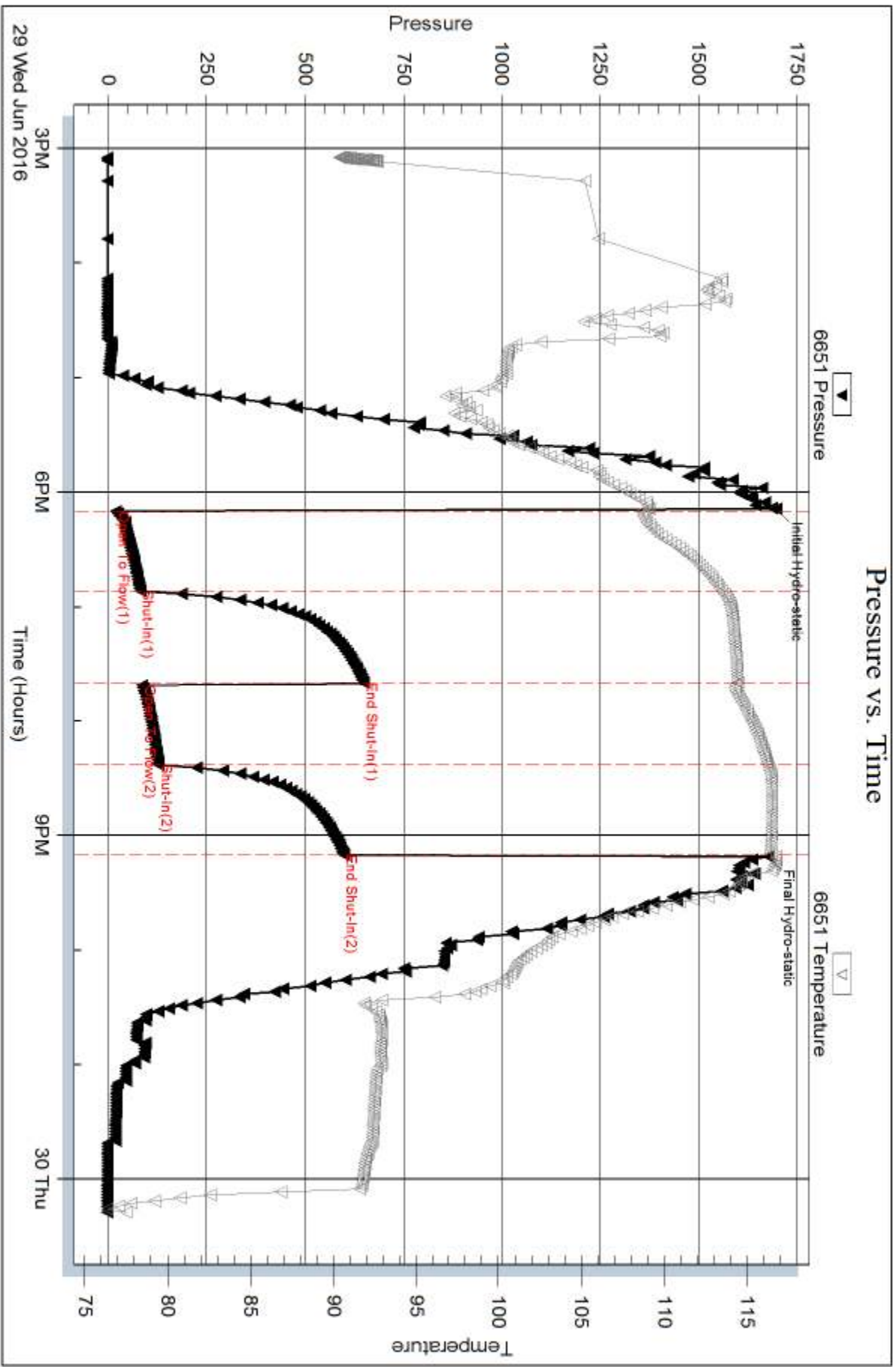
Serial #: 6651

Inside

Dow nting- Nelson Oil Co., Inc.

3-13s-21w Trego,KS

DST Test Number: 1

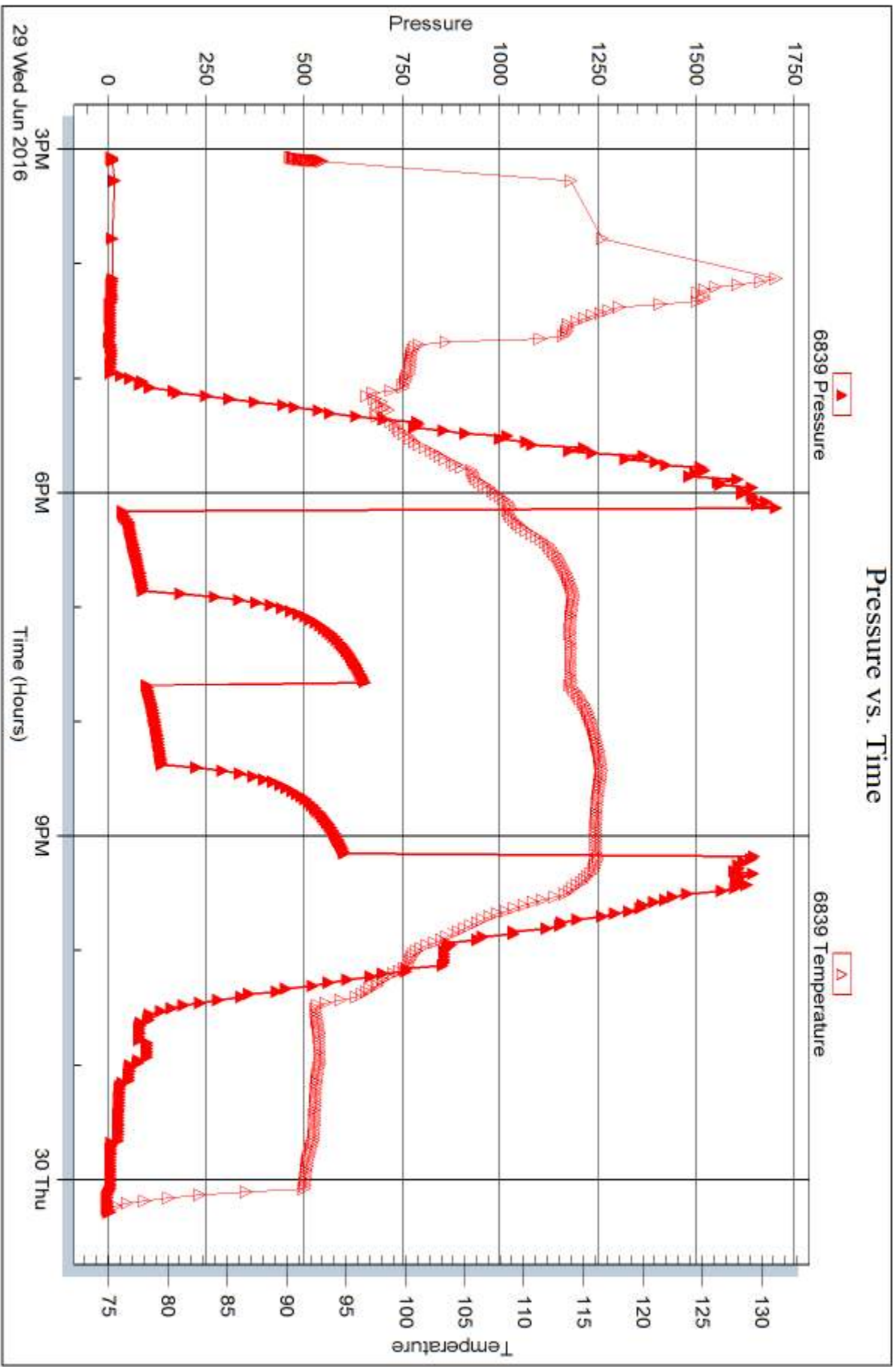


Serial #: 6839

Outside Dow nging- Nelson Oil Co., Inc.

3-13s-21w Trego,KS

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 58095

Printed: 2016.07.05 @ 08:46:21



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

3-13s-21w Trego,KS

Deutscher- Schoenthaler #1-3

Start Date: 2016.06.30 @ 07:25:54

End Date: 2016.06.30 @ 13:25:53

Job Ticket #: 58096 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.07.05 @ 08:45:47

Downing- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

3-13s-21w Trego,KS

DST # 2

LKC "E"

2016.06.30



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 58096

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.06.30 @ 07:25:54

GENERAL INFORMATION:

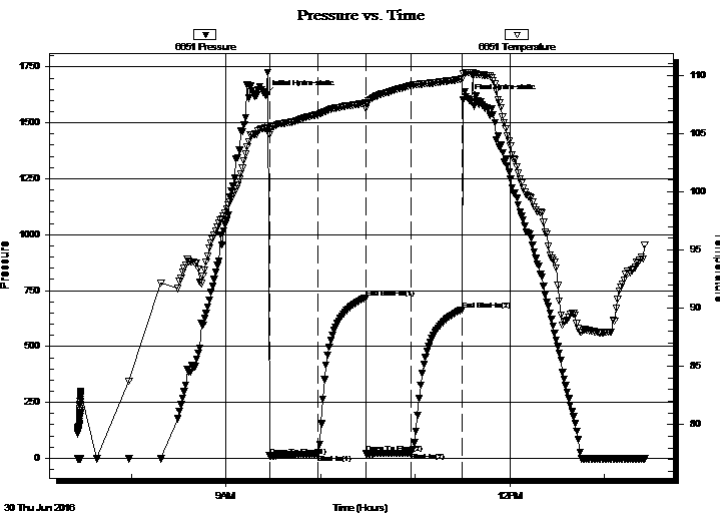
Formation: **LKC "E"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 09:27:23
 Tester: Ray Schw ager
 Time Test Ended: 13:25:53
 Unit No: 77
 Interval: **3547.00 ft (KB) To 3567.00 ft (KB) (TVD)**
 Reference Elevations: 2203.00 ft (KB)
 Total Depth: 3567.00 ft (KB) (TVD)
 2195.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 8.00 ft

Serial #: 6651

Inside

Press@RunDepth: 24.96 psig @ 3548.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.06.30 End Date: 2016.06.30 Last Calib.: 2016.06.30
 Start Time: 07:25:54 End Time: 13:25:53 Time On Btm: 2016.06.30 @ 09:24:53
 Time Off Btm: 2016.06.30 @ 11:33:23

TEST COMMENT: 30-IFP-very w k surface bl thru-out
 30-ISIP-no bl
 30-FFP-no bl
 30-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1625.93	105.45	Initial Hydro-static
3	10.42	104.88	Open To Flow (1)
33	17.87	106.62	Shut-In(1)
64	717.60	107.61	End Shut-In(1)
64	19.98	107.16	Open To Flow (2)
93	24.96	109.14	Shut-In(2)
125	662.94	109.66	End Shut-In(2)
129	1609.72	110.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mudw /show of oil	0.11

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.
PO Box 1019
Hays, KS 67601
ATTN: Marc Dow ning

Deutscher- Schoenthaler #1-3
3-13s-21w Trego,KS
Job Ticket: 58096 **DST#: 2**
Test Start: 2016.06.30 @ 07:25:54

GENERAL INFORMATION:

Formation:	LKC "E"		
Deviated:	No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened:	09:27:23		Tester: Ray Schw ager
Time Test Ended:	13:25:53		Unit No: 77
Interval:	3547.00 ft (KB) To 3567.00 ft (KB) (TVD)	Reference Elevations:	2203.00 ft (KB)
Total Depth:	3567.00 ft (KB) (TVD)		2195.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition:	Fair
		KB to GR/CF:	8.00 ft

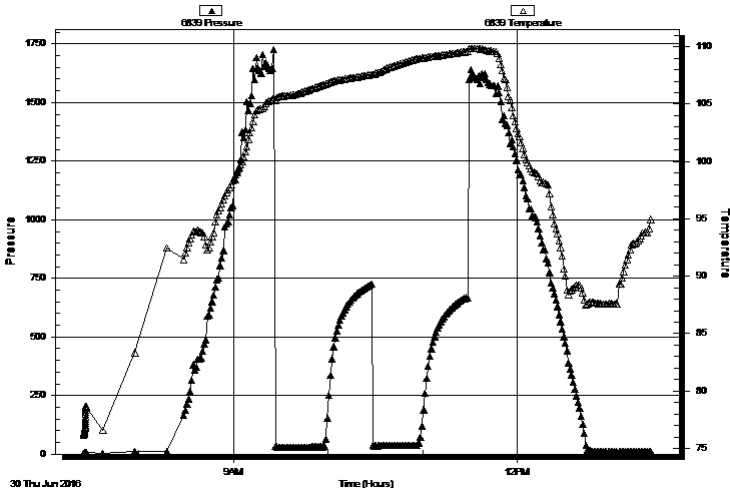
Serial #: 6839

Outside

Press@RunDepth:	psig @ 3548.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2016.06.30	End Date:	2016.06.30
Start Time:	07:25:05	End Time:	13:25:04
		Last Calib.:	2016.06.30
		Time On Btm:	
		Time Off Btm:	

TEST COMMENT: 30-IFP-very w k surface bl thru-out
30-ISIP-no bl
30-FFP-no bl
30-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mudw /show of oil	0.11

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 58096

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.06.30 @ 07:25:54

Tool Information

Drill Pipe:	Length: 3347.00 ft	Diameter: 3.82 inches	Volume: 47.45 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 186.00 ft	Diameter: 2.75 inches	Volume: 1.37 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 48.82 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	3547.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	20.00 ft				
Tool Length:	41.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3527.00	
Shut In Tool	5.00			3532.00	
Hydraulic tool	5.00			3537.00	
Packer	5.00			3542.00	21.00 Bottom Of Top Packer
Packer	5.00			3547.00	
Stubb	1.00			3548.00	
Recorder	0.00	6651	Inside	3548.00	
Recorder	0.00	6839	Outside	3548.00	
Perforations	16.00			3564.00	
Bullnose	3.00			3567.00	20.00 Bottom Packers & Anchor
Total Tool Length:	41.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 58096

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.06.30 @ 07:25:54

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: bbl

Water Loss: 8.68 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 5500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mudw/show of oil	0.110

Total Length: 15.00 ft Total Volume: 0.110 bbl

Num Fluid Samples: 0

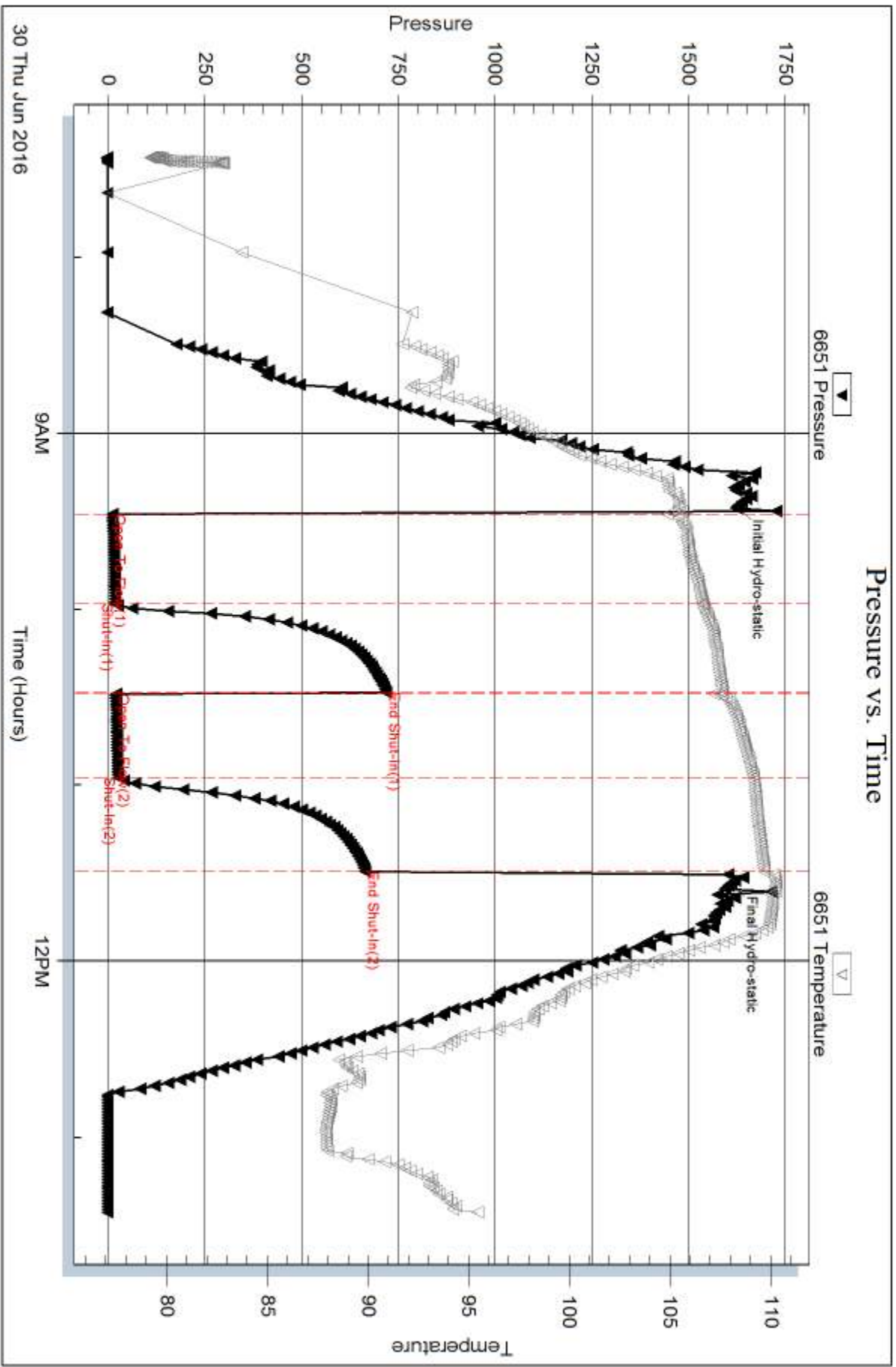
Num Gas Bombs: 0

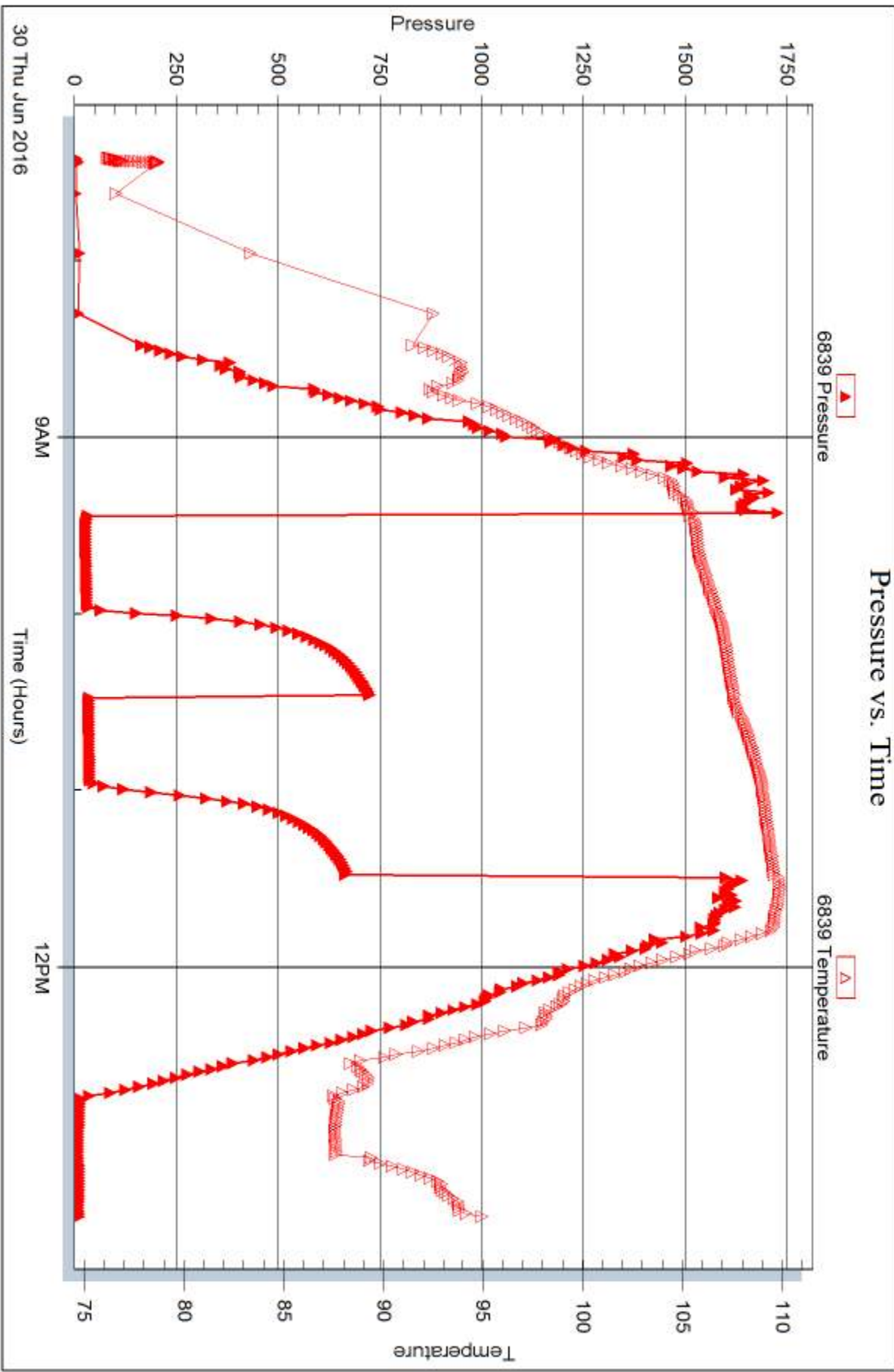
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

3-13s-21w Trego,KS

Deutscher- Schoenthaler #1-3

Start Date: 2016.07.01 @ 12:30:09

End Date: 2016.07.01 @ 19:23:18

Job Ticket #: 65469 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.07.05 @ 08:45:26



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65469

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.07.01 @ 12:30:09

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:30:19

Time Test Ended: 19:23:18

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schw ager

Unit No: 77

Interval: 3791.00 ft (KB) To 3823.00 ft (KB) (TVD)

Reference Elevations: 2203.00 ft (KB)

Total Depth: 3823.00 ft (KB) (TVD)

2195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8018

Inside

Press@RunDepth: 72.30 psig @ 3795.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.07.01

End Date:

2016.07.01

Last Calib.:

2016.07.01

Start Time: 12:30:09

End Time:

19:23:18

Time On Btm:

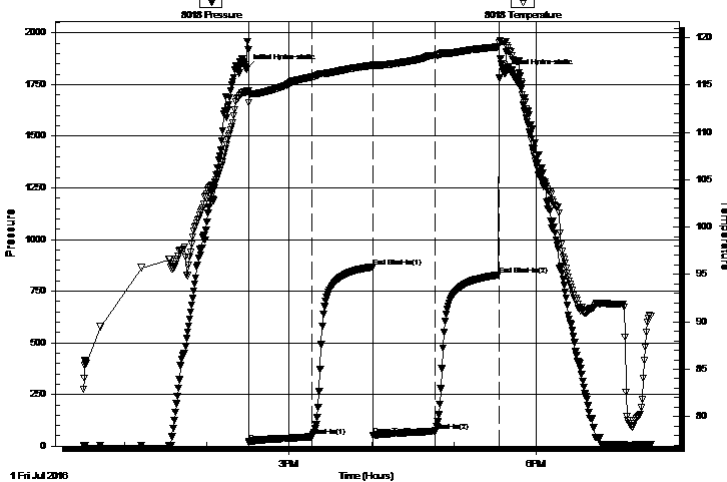
2016.07.01 @ 14:28:49

Time Off Btm:

2016.07.01 @ 17:37:03

TEST COMMENT: 45-IFP-w k to a fr bl 1/4" to 4 1/2" bl
45-ISIP-no bl
45-FFP-w k to a fr bl 1/4" to 3 1/2" bl
45-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1825.88	114.25	Initial Hydro-static
2	19.48	113.10	Open To Flow (1)
48	45.85	115.85	Shut-In(1)
92	867.60	117.08	End Shut-In(1)
93	51.72	116.91	Open To Flow (2)
138	72.30	118.11	Shut-In(2)
184	828.42	119.03	End Shut-In(2)
189	1802.60	119.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	90'GIP	0.00
62.00	MGO 20%G15%M65%O	0.46
105.00	CO	0.77

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

Deutscher- Schoenthaler #1-3

3-13s-21w Trego,KS

Job Ticket: 65469

DST#: 3

Test Start: 2016.07.01 @ 12:30:09

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:30:19

Time Test Ended: 19:23:18

Interval: 3791.00 ft (KB) To 3823.00 ft (KB) (TVD)

Total Depth: 3823.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schw ager

Unit No: 77

Reference Elevations: 2203.00 ft (KB)

2195.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3795.00 ft (KB)

Start Date: 2016.07.01

End Date:

2016.07.01

Capacity: 8000.00 psig

Last Calib.:

2016.07.01

Start Time: 12:30:22

End Time:

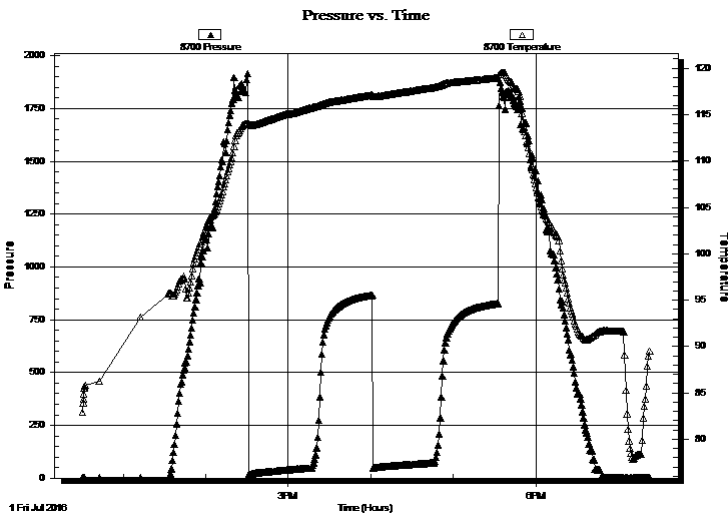
19:23:16

Time On Btm:

Time Off Btm:

TEST COMMENT: 45-IFP-w k to a fr bl 1/4" to 4 1/2" bl
45-ISIP-no bl
45-FFP-w k to a fr bl 1/4" to 3 1/2" bl
45-FSIP-no bl

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	90'GIP	0.00
62.00	MGO 20%G15%M65%O	0.46
105.00	CO	0.77

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65469

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.07.01 @ 12:30:09

Tool Information

Drill Pipe:	Length: 3598.00 ft	Diameter: 3.82 inches	Volume: 51.00 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 186.00 ft	Diameter: 2.75 inches	Volume: 1.37 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 52.37 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	46000.00 lb
Depth to Top Packer:	3791.00 ft			Final	46000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	32.00 ft				
Tool Length:	53.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3771.00	
Shut In Tool	5.00			3776.00	
Hydraulic tool	5.00			3781.00	
Packer	5.00			3786.00	21.00 Bottom Of Top Packer
Packer	5.00			3791.00	
Stubb	1.00			3792.00	
Perforations	3.00			3795.00	
Recorder	0.00	8018	Inside	3795.00	
Recorder	0.00	8700	Outside	3795.00	
Perforations	25.00			3820.00	
Bullnose	3.00			3823.00	32.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65469

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.07.01 @ 12:30:09

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.66 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	90'GIP	0.000
62.00	MGO 20%G15%M65%O	0.455
105.00	CO	0.771

Total Length: 167.00 ft

Total Volume: 1.226 bbl

Num Fluid Samples: 0

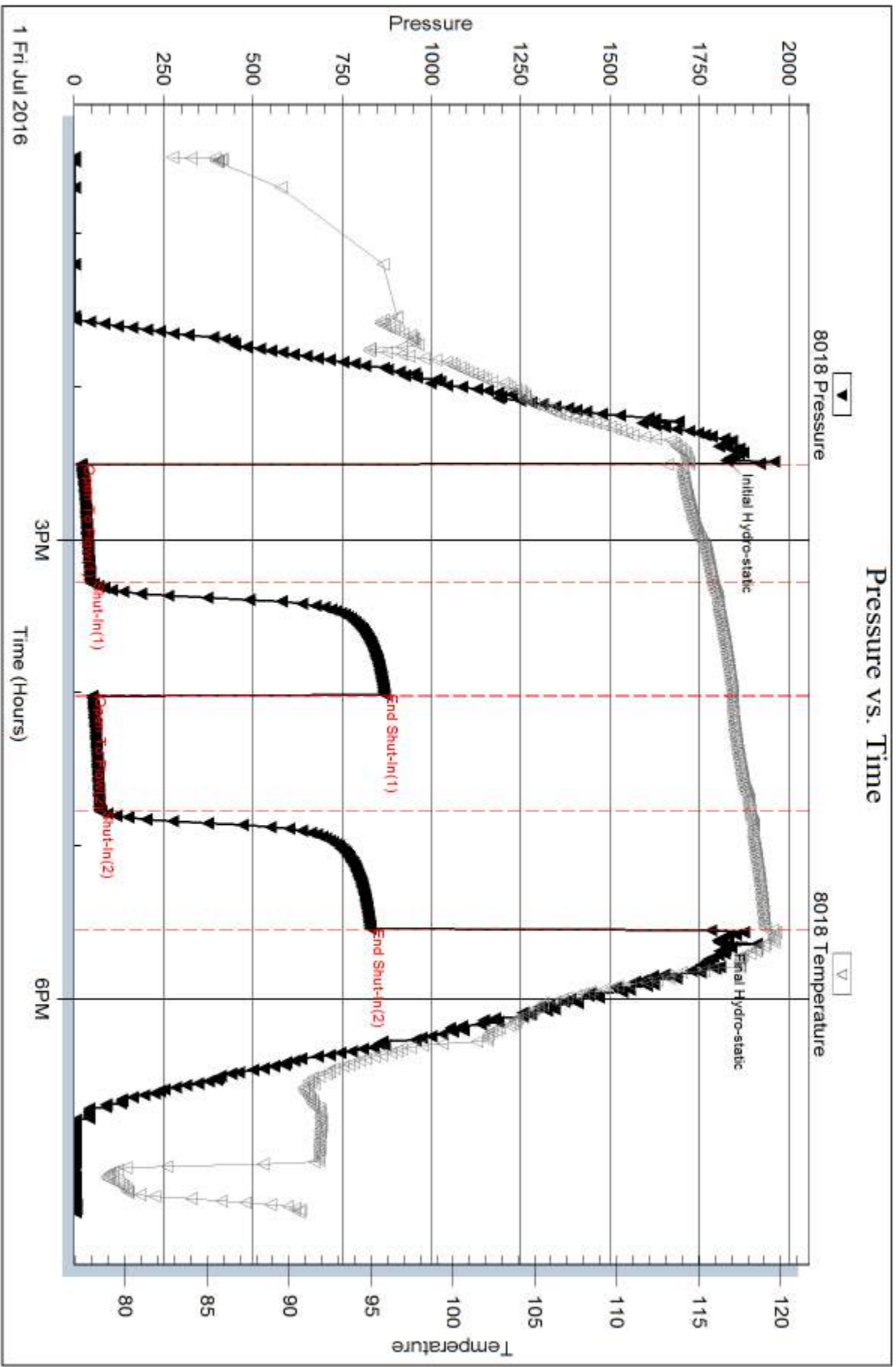
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

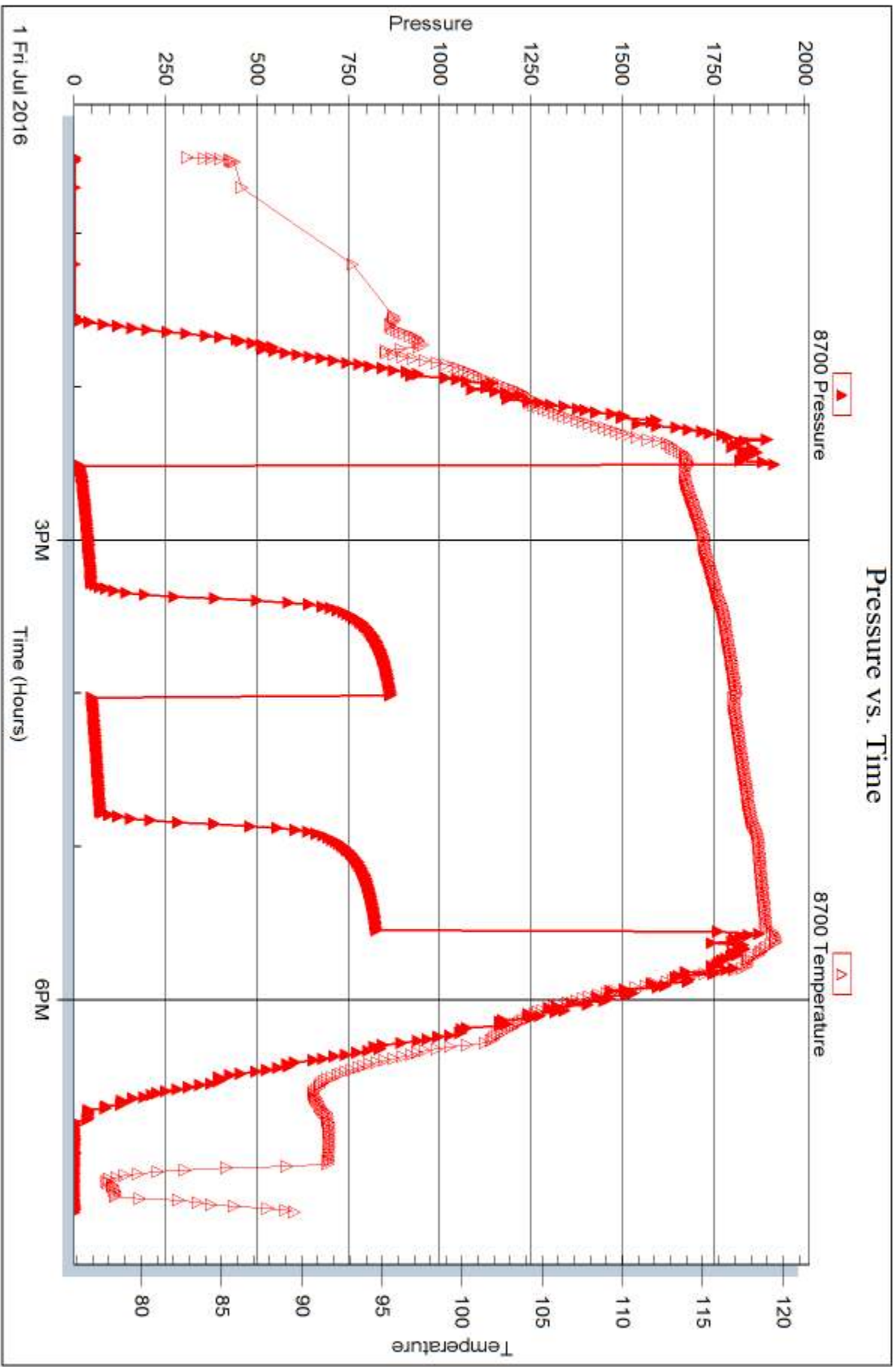


Serial #: 8700

Outside Dow nigr- Nelson Oil Co., Inc.

3-13s-21w Trego,KS

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 65469

Printed: 2016.07.05 @ 08:45:27



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

3-13s-21w Trego,KS

Deutscher- Schoenthaler #1-3

Start Date: 2016.07.02 @ 03:30:05

End Date: 2016.07.02 @ 11:20:14

Job Ticket #: 65470 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.07.05 @ 08:45:02

Downing- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

3-13s-21w Trego,KS

DST # 4

Arbuckle

2016.07.02



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65470

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.07.02 @ 03:30:05

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:58:15

Time Test Ended: 11:20:14

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schw ager

Unit No: 77

Interval: 3817.00 ft (KB) To 3862.00 ft (KB) (TVD)

Reference Elevations: 2203.00 ft (KB)

Total Depth: 3862.00 ft (KB) (TVD)

2195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8018

Inside

Press@RunDepth: 62.64 psig @ 3826.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.07.02

End Date:

2016.07.02

Last Calib.:

2016.07.02

Start Time:

03:30:05

End Time:

11:20:14

Time On Btm:

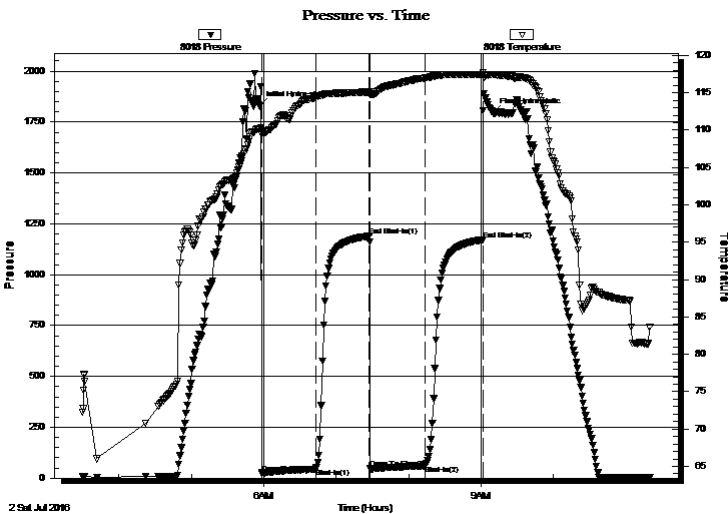
2016.07.02 @ 05:56:30

Time Off Btm:

2016.07.02 @ 09:10:14

TEST COMMENT: 45-IFP-w k bl thru-out 1/4" to 1 1/2" bl
45-ISIP-no bl
45-FFP-w k bl thru-out surface to 1/2" bl
45-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1828.85	110.19	Initial Hydro-static
2	23.87	109.35	Open To Flow (1)
47	50.51	114.36	Shut-In(1)
91	1189.65	115.11	End Shut-In(1)
92	45.76	114.78	Open To Flow (2)
138	62.64	117.00	Shut-In(2)
185	1172.16	117.47	End Shut-In(2)
194	1793.70	117.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	30'GIP	0.00
60.00	HO&GCM 10%G25%O65%M	0.44
30.00	CO	0.22

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65470

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.07.02 @ 03:30:05

Tool Information

Drill Pipe:	Length: 3627.00 ft	Diameter: 3.82 inches	Volume: 51.41 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 186.00 ft	Diameter: 2.75 inches	Volume: 1.37 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume: 52.78 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial	46000.00 lb
Depth to Top Packer:	3817.00 ft			Final	46000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	45.00 ft				
Tool Length:	66.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3797.00	
Shut In Tool	5.00			3802.00	
Hydraulic tool	5.00			3807.00	
Packer	5.00			3812.00	21.00 Bottom Of Top Packer
Packer	5.00			3817.00	
Stubb	1.00			3818.00	
Perforations	8.00			3826.00	
Recorder	0.00	8018	Inside	3826.00	
Recorder	0.00	8700	Outside	3826.00	
Drill Pipe	33.00			3859.00	
Bullnose	3.00			3862.00	45.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65470

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.07.02 @ 03:30:05

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 49.00 sec/qt
Water Loss: 8.67 in³
Resistivity: ohm.m
Salinity: 9500.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 36 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	30'GIP	0.000
60.00	HO&GCM 10%G25%O65%M	0.441
30.00	CO	0.220

Total Length: 90.00 ft Total Volume: 0.661 bbl

Num Fluid Samples: 0

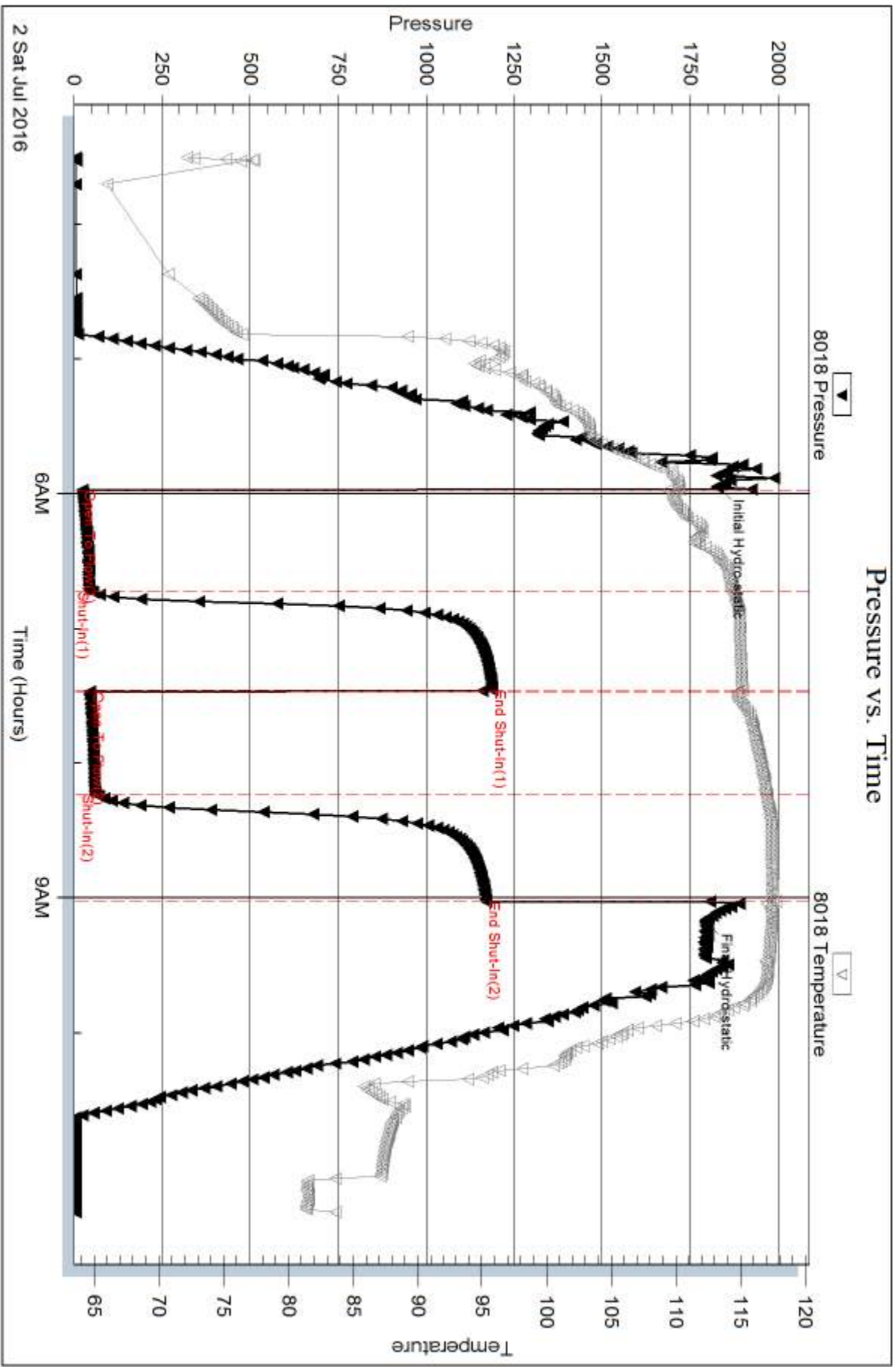
Num Gas Bombs: 0

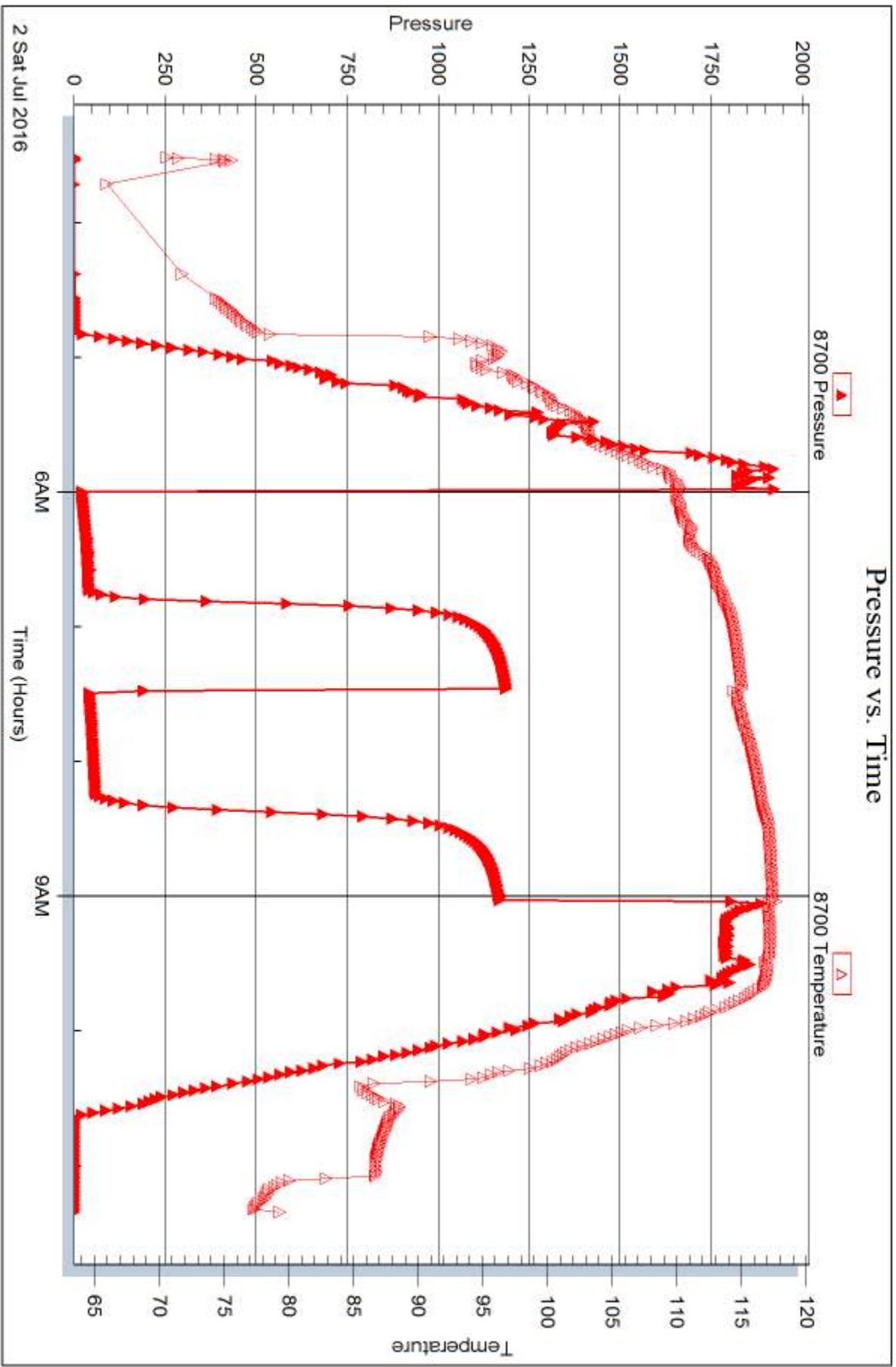
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

3-13s-21w Trego,KS

Deutscher- Schoenthaler #1-3

Start Date: 2016.07.02 @ 18:10:12

End Date: 2016.07.03 @ 00:42:57

Job Ticket #: 65471 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.07.05 @ 08:44:33

Downing- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

3-13s-21w Trego,KS

DST # 5

Arbuckle

2016.07.02



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65471

DST#: 5

ATTN: Marc Dow ning

Test Start: 2016.07.02 @ 18:10:12

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:34:42

Time Test Ended: 00:42:57

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schw ager

Unit No: 77

Interval: 3862.00 ft (KB) To 3869.00 ft (KB) (TVD)

Reference Elevations: 2203.00 ft (KB)

Total Depth: 3869.00 ft (KB) (TVD)

2195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8018

Inside

Press@RunDepth: 23.73 psig @ 3863.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.07.02

End Date:

2016.07.03

Last Calib.: 2016.07.03

Start Time: 18:10:17

End Time:

00:42:56

Time On Btm: 2016.07.02 @ 20:32:42

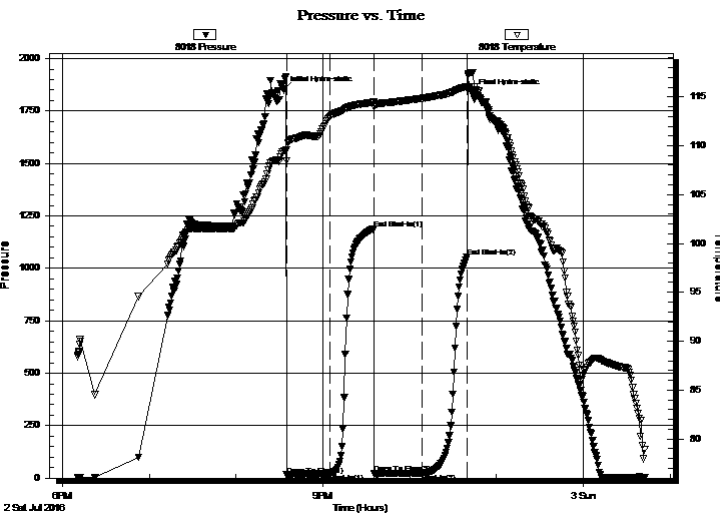
Time Off Btm: 2016.07.02 @ 22:43:12

TEST COMMENT: 30-IFP-surface bl thru-out

30-ISIP-no bl

30-FFP-no bl

30FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1849.57	109.50	Initial Hydro-static
2	15.66	108.43	Open To Flow (1)
33	21.40	112.98	Shut-In(1)
63	1189.67	114.45	End Shut-In(1)
63	21.84	113.97	Open To Flow (2)
96	23.73	114.86	Shut-In(2)
127	1054.54	116.03	End Shut-In(2)
131	1832.39	117.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	CO	0.01
10.00	SOCM 3%O97%M	0.07

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

ATTN: Marc Dow ning

Job Ticket: 65471

DST#: 5

Test Start: 2016.07.02 @ 18:10:12

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:34:42

Time Test Ended: 00:42:57

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schw ager

Unit No: 77

Interval: 3862.00 ft (KB) To 3869.00 ft (KB) (TVD)

Reference Elevations: 2203.00 ft (KB)

Total Depth: 3869.00 ft (KB) (TVD)

2195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3863.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.07.02

End Date: 2016.07.03

Last Calib.: 2016.07.03

Start Time: 18:10:05

End Time: 00:42:44

Time On Btm:

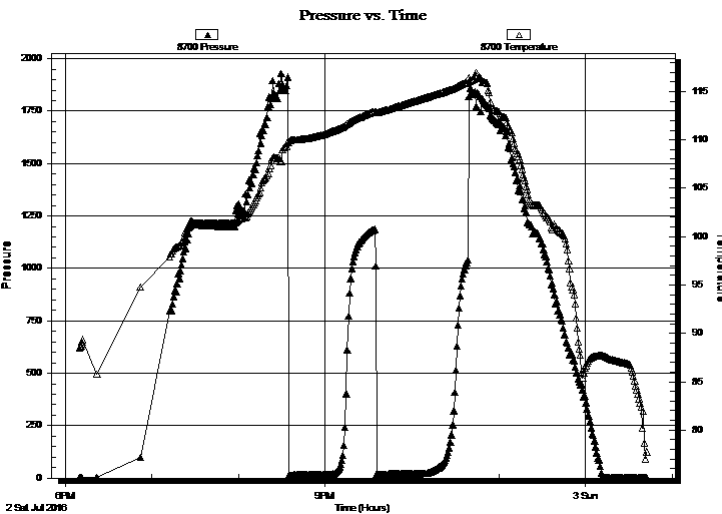
Time Off Btm:

TEST COMMENT: 30-IFP-surface bl thru-out

30-ISIP-no bl

30-FFP-no bl

30FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	CO	0.01
10.00	SOCM 3%O97%M	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65471

DST#: 5

ATTN: Marc Dow ning

Test Start: 2016.07.02 @ 18:10:12

Tool Information

Drill Pipe:	Length: 3660.00 ft	Diameter: 3.82 inches	Volume: 51.88 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 186.00 ft	Diameter: 2.75 inches	Volume: 1.37 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 53.25 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	46000.00 lb
Depth to Top Packer:	3862.00 ft			Final	46000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	7.00 ft				
Tool Length:	28.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3842.00	
Shut In Tool	5.00			3847.00	
Hydraulic tool	5.00			3852.00	
Packer	5.00			3857.00	21.00 Bottom Of Top Packer
Packer	5.00			3862.00	
Stubb	1.00			3863.00	
Recorder	0.00	8018	Inside	3863.00	
Recorder	0.00	8700	Outside	3863.00	
Perforations	3.00			3866.00	
Bullnose	3.00			3869.00	7.00 Bottom Packers & Anchor
Total Tool Length:	28.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65471

DST#: 5

ATTN: Marc Dow ning

Test Start: 2016.07.02 @ 18:10:12

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:

bbf

Water Loss: 9.14 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
1.00	CO	0.007
10.00	SOCM 3%O97%M	0.073

Total Length: 11.00 ft Total Volume: 0.080 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

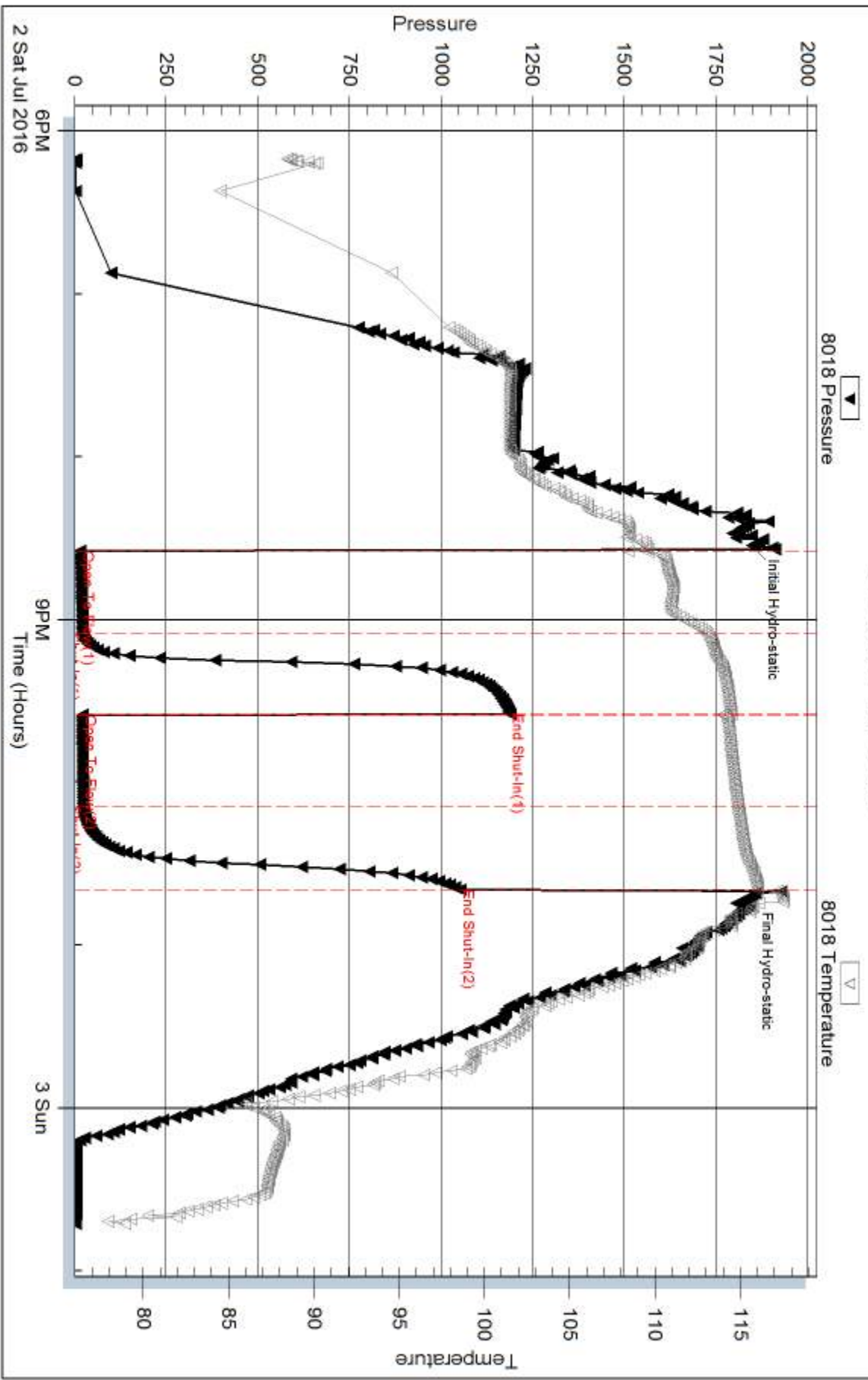
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

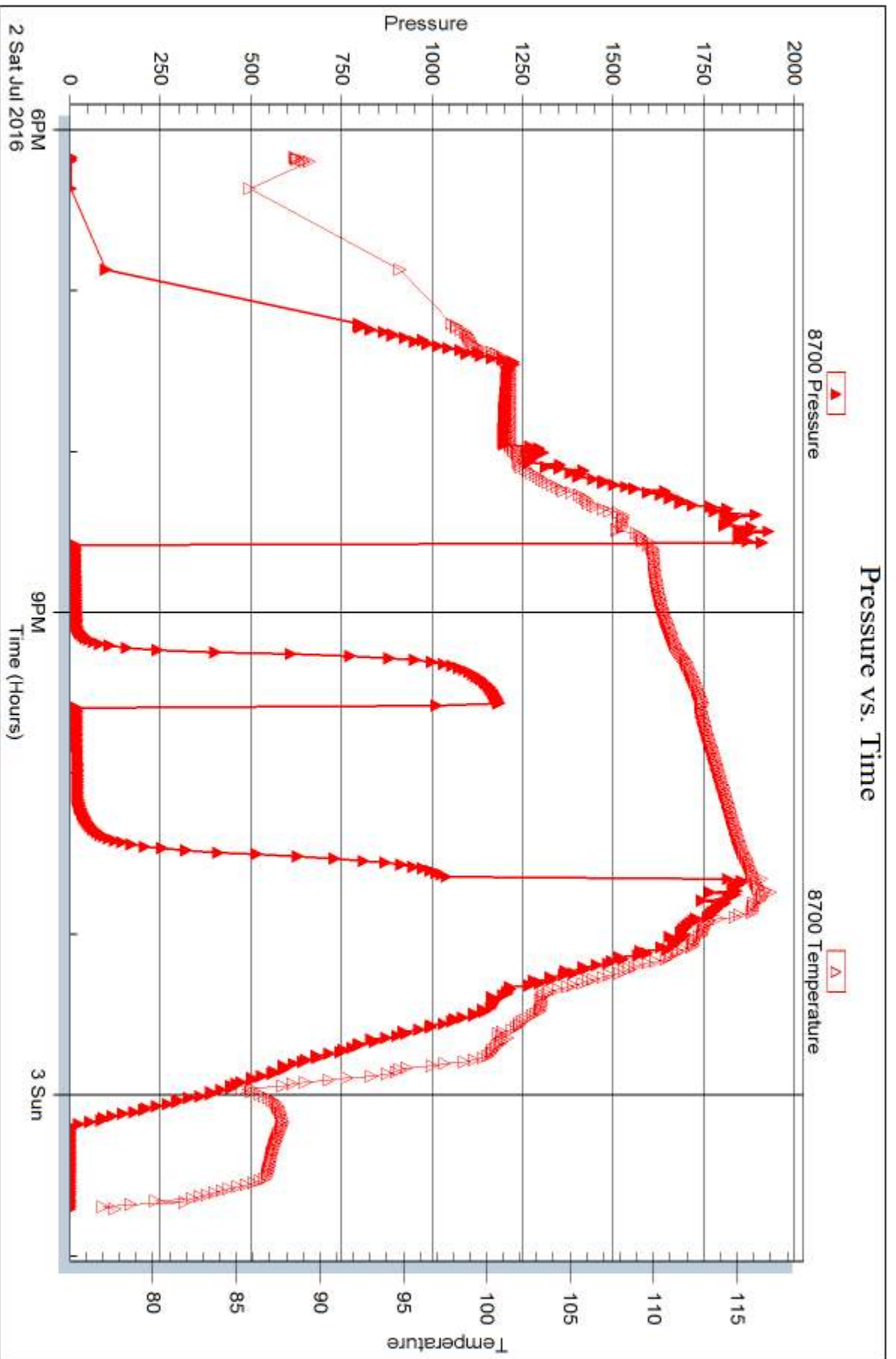


Serial #: 8700

Outside Dow nng- Nelson Oil Co., Inc.

3-13s-21w Trego,KS

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 65471

Printed: 2016.07.05 @ 08:44:35



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

3-13s-21w Trego,KS

Deutscher- Schoenthaler #1-3

Start Date: 2016.07.03 @ 07:20:42

End Date: 2016.07.03 @ 13:21:36

Job Ticket #: 65472 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.07.05 @ 08:43:25

Downing- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

3-13s-21w Trego,KS

DST # 6

Arbuckle

2016.07.03



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65472

DST#: 6

ATTN: Marc Dow ning

Test Start: 2016.07.03 @ 07:20:42

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:32:22

Time Test Ended: 13:21:36

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schw ager

Unit No: 77

Interval: 3869.00 ft (KB) To 3876.00 ft (KB) (TVD)

Reference Elevations: 2203.00 ft (KB)

Total Depth: 3876.00 ft (KB) (TVD)

2195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8018

Inside

Press@RunDepth: 44.81 psig @ 3870.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.07.03

End Date:

2016.07.03

Last Calib.:

2016.07.03

Start Time: 07:20:42

End Time:

13:21:36

Time On Btm:

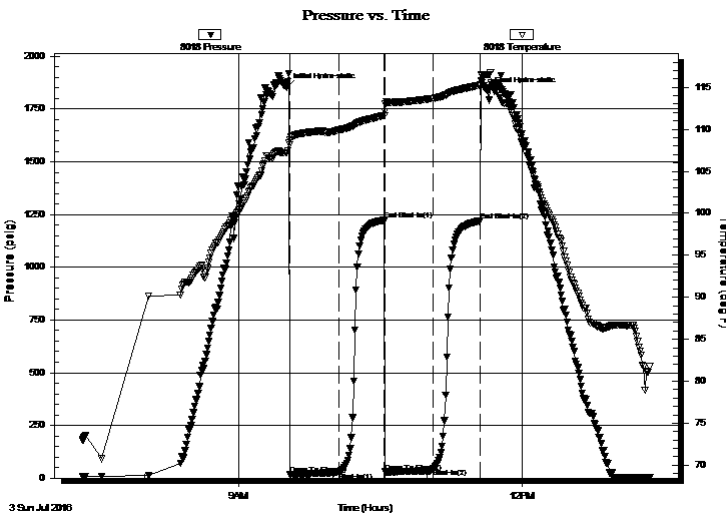
2016.07.03 @ 09:30:22

Time Off Btm:

2016.07.03 @ 11:38:36

TEST COMMENT: 30-IFP-w k bl thru-out surface to 1/2" bl
30-ISIP-no bl
30-FFP-w k bl thru-out 1/4"to 3/4" bl
30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1850.57	107.22	Initial Hydro-static
2	17.34	108.20	Open To Flow (1)
33	26.53	109.88	Shut-In(1)
63	1223.09	111.65	End Shut-In(1)
63	29.53	112.07	Open To Flow (2)
94	44.81	113.69	Shut-In(2)
123	1218.88	115.25	End Shut-In(2)
129	1831.48	116.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	CO	0.22
20.00	HOCM	0.15

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Dow ning- Nelson Oil Co., Inc.

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

Deutscher- Schoenthaler #1-3

3-13s-21w Trego,KS

Job Ticket: 65472 **DST#: 6**

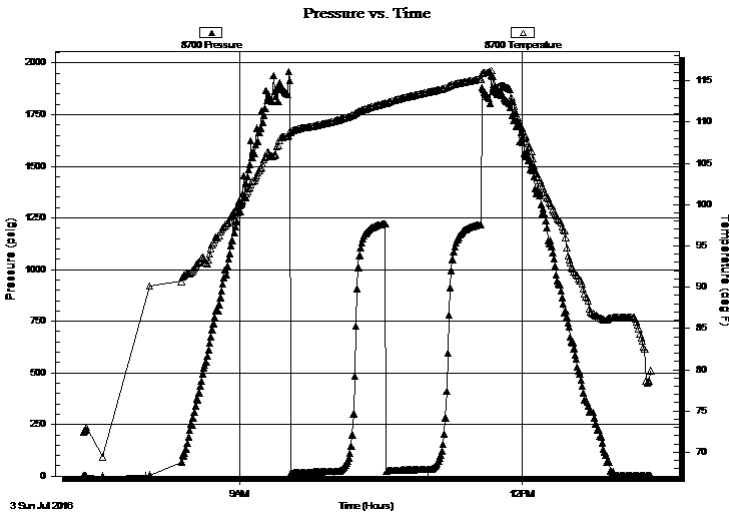
Test Start: 2016.07.03 @ 07:20:42

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 09:32:22 Tester: Ray Schw ager
 Time Test Ended: 13:21:36 Unit No: 77
 Interval: **3869.00 ft (KB) To 3876.00 ft (KB) (TVD)**
 Total Depth: 3876.00 ft (KB) (TVD) Reference Elevations: 2203.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft
 2195.00 ft (CF)

Serial #: 8700 Outside
 Press@RunDepth: psig @ 3870.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.07.03 End Date: 2016.07.03 Last Calib.: 2016.07.03
 Start Time: 07:20:45 End Time: 13:21:39 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-w k bl thru-out surface to 1/2" bl
 30-ISIP-no bl
 30-FFP-w k bl thru-out 1/4" to 3/4" bl
 30-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	CO	0.22
20.00	HOCM	0.15

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65472

DST#: 6

ATTN: Marc Dow ning

Test Start: 2016.07.03 @ 07:20:42

Tool Information

Drill Pipe:	Length: 3690.00 ft	Diameter: 3.82 inches	Volume: 52.31 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 186.00 ft	Diameter: 2.75 inches	Volume: 1.37 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 53.68 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	46000.00 lb
Depth to Top Packer:	3869.00 ft			Final	46000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	7.00 ft				
Tool Length:	28.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3849.00	
Shut In Tool	5.00			3854.00	
Hydraulic tool	5.00			3859.00	
Packer	5.00			3864.00	21.00 Bottom Of Top Packer
Packer	5.00			3869.00	
Stubb	1.00			3870.00	
Recorder	0.00	8018	Inside	3870.00	
Recorder	0.00	8700	Outside	3870.00	
Perforations	3.00			3873.00	
Safety Joint	3.00			3876.00	7.00 Bottom Packers & Anchor
Total Tool Length:	28.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning- Nelson Oil Co., Inc.

Deutscher- Schoenthaler #1-3

PO Box 1019
Hays, KS 67601

3-13s-21w Trego,KS

Job Ticket: 65472

DST#: 6

ATTN: Marc Dow ning

Test Start: 2016.07.03 @ 07:20:42

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.17 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
30.00	CO	0.220
20.00	HOCM	0.147

Total Length: 50.00 ft Total Volume: 0.367 bbl

Num Fluid Samples: 0

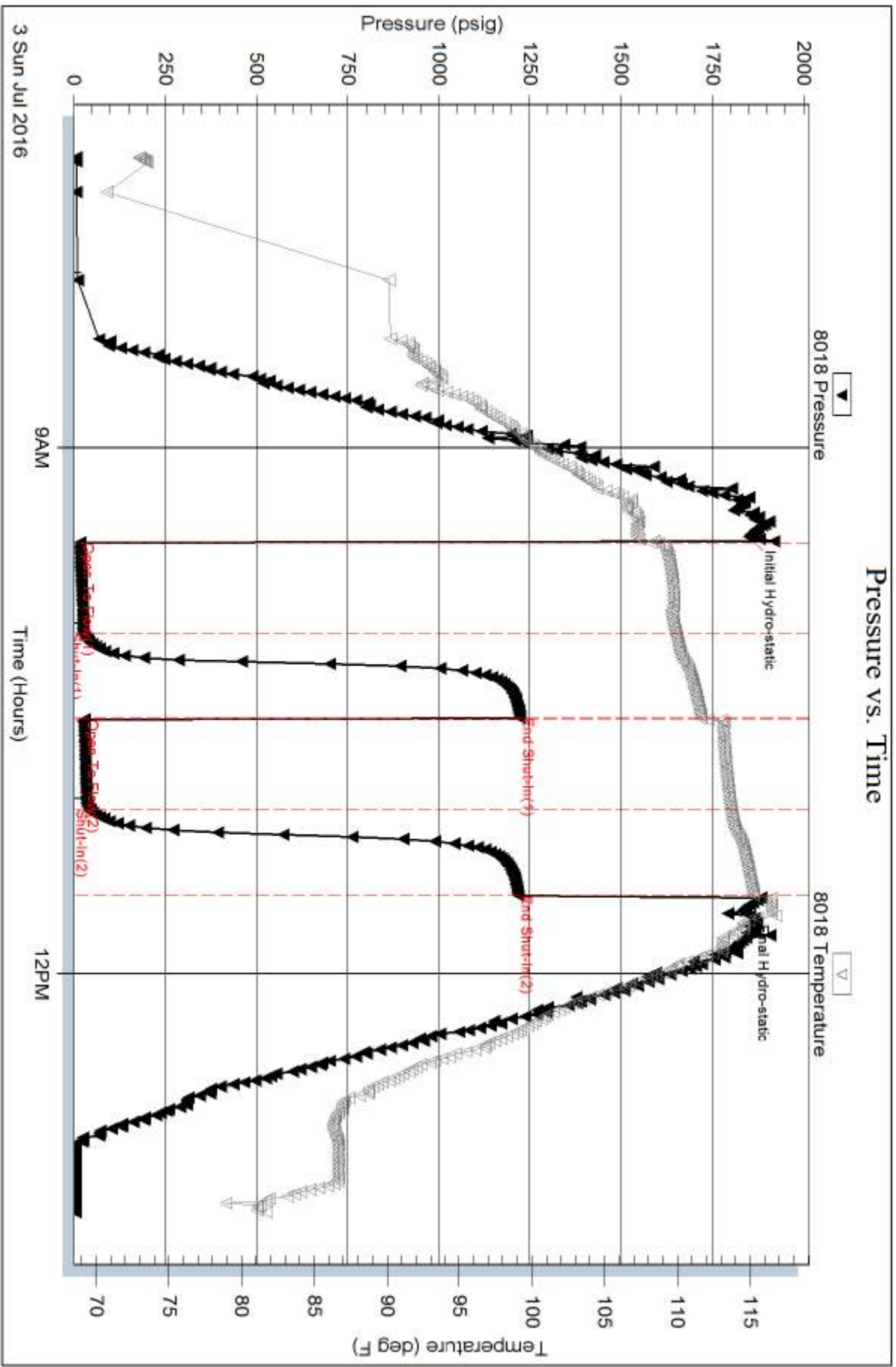
Num Gas Bombs: 0

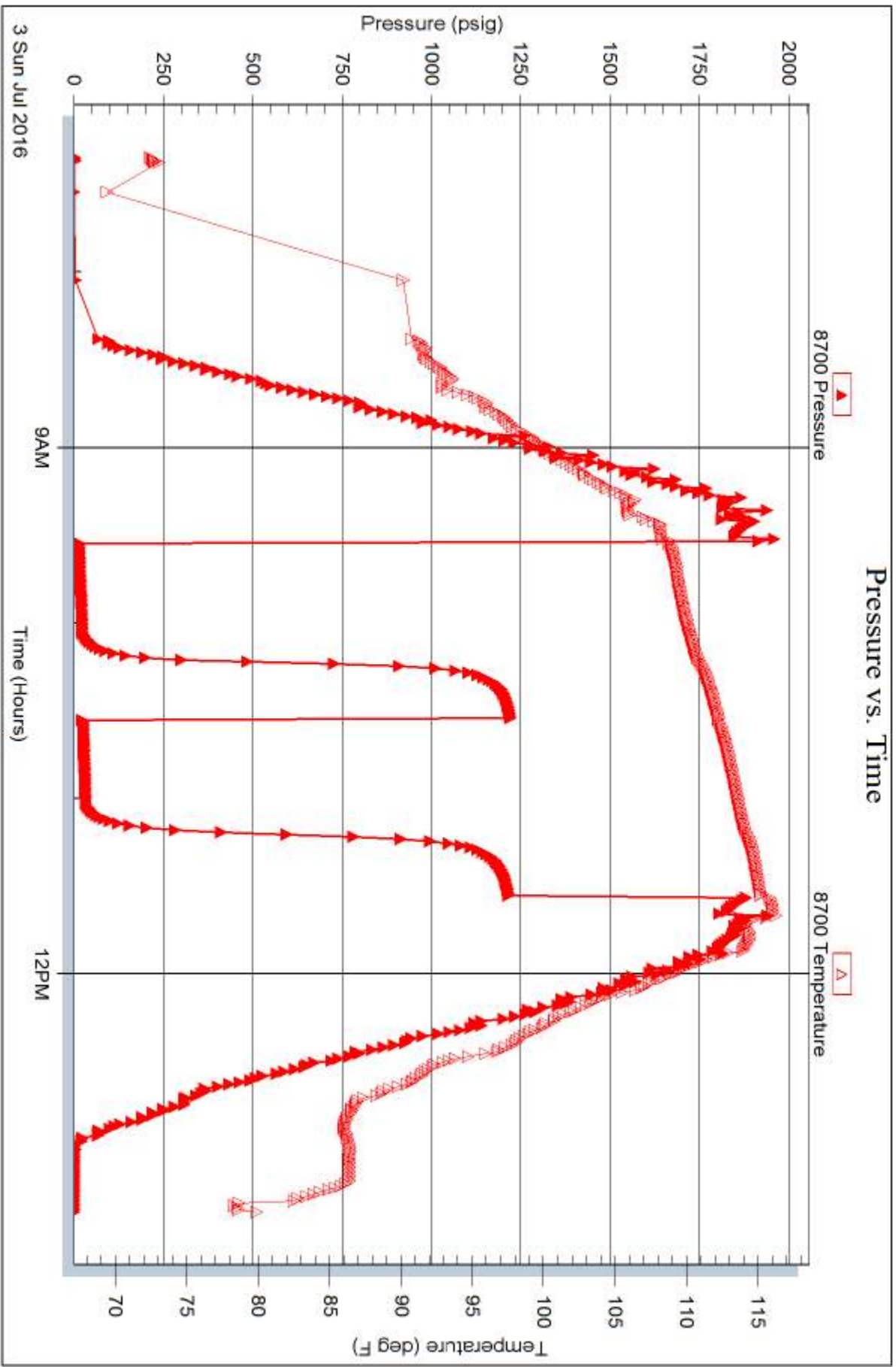
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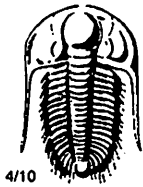
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58095

Well Name & No. Deutsher-Schoenthaeder #1-3 Test No. 1 Date 6/29/16
 Company Dunning-Nelson Oil Co., Inc. Elevation 2203 KB 2195 GL
 Address PO Box 1019 Hays, KS 67601
 Co. Rep / Geo. Marc Dunning Rig Discovery #2
 Location: Sec. 3 Twp. 13 S Rge. 21 W Co. Trego State KS

Interval Tested 3507-3552 Zone Tested LKC "C+D"
 Anchor Length 45' Drill Pipe Run 3189 Mud Wt. 8.9
 Top Packer Depth 3502 Drill Collars Run — Vis 47
 Bottom Packer Depth 3507 Wt. Pipe Run 311 WL 8.8
 Total Depth 3552 Chlorides 5,500 ppm System LCM 2nd

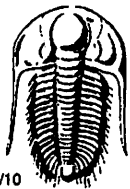
Blow Description IF - Slowly built to 7 1/2"
±SI - No blow
FF - Slowly built to 4"
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>218</u>	<u>MW</u>			<u>75</u>	<u>25</u>
<u>1</u>	<u>CO</u>				

Rec Total 219' BHT 116° Gravity _____ API RW 07 @ 76° F Chlorides 85,000 ppm
 (A) Initial Hydrostatic 1696 Test 1050 T-On Location 1423
 (B) First Initial Flow 19 Jars _____ T-Started 1504
 (C) First Final Flow 81 Safety Joint _____ T-Open 1809
 (D) Initial Shut-In 649 Circ Sub _____ T-Pulled 2109
 (E) Second Initial Flow 80 Hourly Standby _____ T-Out 6/30 0017
 (F) Second Final Flow 127 Mileage 54 RT 40.50 Comments _____
 (G) Final Shut-In 598 Sampler _____
 (H) Final Hydrostatic 1677 Straddle _____
 Ruined Shale Packer _____
 Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1090.50 Sub Total 0
 Total 1090.50 MP/DST Disc't _____

Approved By _____ Our Representative Bryan Condale

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58096

Well Name & No. Deutscher-Schoenthaler 1-3 Test No. 2 Date 6-30-16
 Company Downing-Nelson Oil Co Inc Elevation 2203 KB 2195 GL
 Address Po Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC Downing Rig Discovery 2
 Location: Sec. 3 Twp. 13^s Rge. 21^w Co. Trego State Ks

Interval Tested 3547-3567 Zone Tested LKC E
 Anchor Length 20 Drill Pipe Run 3347 Mud Wt. 8.8
 Top Packer Depth 3542 Drill Collars Run - Vis 55
 Bottom Packer Depth 3547 Wt. Pipe Run 186 WL 8.8
 Total Depth 3567 Chlorides 5500 ppm System LCM 2#

Blow Description I FP - VERY WEAK SURFACE BLOW THRU-OUT
T SIP - NO BLOW
F FP - NO BLOW
F SIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud</u>				
	<u>w/show of oil</u>				

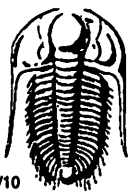
Rec Total 15 BHT 109 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1625 Test 1050 T-On Location 0645
 (B) First Initial Flow 10 Jars - T-Started 0725
 (C) First Final Flow 17 Safety Joint - T-Open 0925
 (D) Initial Shut-In 717 Circ Sub - T-Pulled 1125
 (E) Second Initial Flow 19 Hourly Standby - T-Out 1325
 (F) Second Final Flow 24 Mileage 54 RT 40.50 Comments -
 (G) Final Shut-In 662 Sampler -
 (H) Final Hydrostatic 1609 Straddle - Ruined Shale Packer -

Initial Open 30 Shale Packer - Ruined Packer -
 Initial Shut-In 30 Extra Packer - Extra Copies -
 Final Flow 30 Extra Recorder - Sub Total 0
 Final Shut-In 30 Day Standby - Total 1090.50
 Accessibility - MP/DST Disc't -

Sub Total 1090.50
 Approved By _____ Our Representative RAY SCHWAGER THANK YOU

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65469

Well Name & No. Deutscher-Schoenthaler 1-3 Test No. 3 Date 7-1-2016
 Company Downing-Nelson Oil Co Inc Elevation 2203 KB 2195 GL
 Address PO Box 1019 Hays, Mo 67601
 Co. Rep / Geo. MARC DOWNING Rig Discovery rig 2
 Location: Sec. 3 Twp. 13^s Rge. 21^w Co. Trego State Mo

Interval Tested 3791-3823 Zone Tested MARMATON
 Anchor Length 32 Drill Pipe Run 3598 Mud Wt. 9.3
 Top Packer Depth 3786 Drill Collars Run - Vis 51
 Bottom Packer Depth 3791 Wt. Pipe Run 186 WL 8.8
 Total Depth 3823 Chlorides 9500 ppm System LCM 1 1/2 #
 Blow Description IFP - WEAK TO A FAIR BLOW 1/4" TO 4 1/2" BLOW
ISIP - NO BLOW
FFP - WEAK TO A FAIR BLOW 1/4" TO 3 1/2" BLOW
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>GTP</u>				
<u>105</u>	<u>CO</u>				
<u>62</u>	<u>MGO</u>	<u>20</u>	<u>65</u>		<u>15</u>
Rec Total	<u>167</u>	BHT	<u>119</u>	Gravity	<u>39</u>

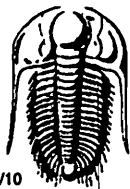
API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1825 Test 1050 T-On Location 1015
 (B) First Initial Flow 19 Jars _____ T-Started 1230
 (C) First Final Flow 45 Safety Joint _____ T-Open 1430
 (D) Initial Shut-In 867 Circ Sub _____ T-Pulled 1730
 (E) Second Initial Flow 51 Hourly Standby _____ T-Out 1923
 (F) Second Final Flow 72 Mileage 54 RT 40.50 Comments _____
 (G) Final Shut-In 828 Sampler _____
 (H) Final Hydrostatic 1802 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 45 Ruined Shale Packer _____
 Initial Shut-In 45 Ruined Packer _____
 Final Flow 45 Extra Copies _____
 Final Shut-In 45 Sub Total 0
 Total 1090.50
 MP/DST Disc't _____
 Sub Total 1090.50

Approved By _____ Our Representative RAY SCHWAGER *Thank you*

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65470

Well Name & No. Deutscher-Schoenthaler 1-3 Test No. 4 Date 7-2-2016
 Company Downing-Nelson OIL Co. Inc Elevation 2203 KB 2195 GL
 Address PO Box 1019 Hays, Ko 67601
 Co. Rep / Geo. MARC DOWNING Rig Discovery rig 2
 Location: Sec. 3 Twp. 13^s Rge. 21^w Co. ELLIS State K

Interval Tested 3817-3862 Zone Tested Arbuckle
 Anchor Length 45 Drill Pipe Run 3627 Mud Wt. 9.2
 Top Packer Depth 3812 Drill Collars Run - Vis 49
 Bottom Packer Depth 3817 Wt. Pipe Run 186 WL 8.8
 Total Depth 3862 Chlorides 9500 ppm System LCM 1 1/2 #
 Blow Description IFP - WEAK Blow thru-out 1/4" TO 1/2" Blow
ISIP - NO Blow
FFP - WEAK Blow thru-out, surface TO 1/2" Blow
FSIP - NO Blow

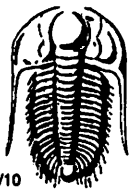
Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>GIP</u>				
<u>30</u>	<u>CO</u>				
<u>60</u>	<u>H0 + 6CM</u>	<u>10</u>	<u>25</u>		<u>65</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 90 BHT 117 Gravity 36 API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1828 Test 1050 T-On Location 0300
 (B) First Initial Flow 23 Jars _____ T-Started 0330
 (C) First Final Flow 50 Safety Joint _____ T-Open 0600
 (D) Initial Shut-In 1189 Circ Sub _____ T-Pulled 0900
 (E) Second Initial Flow 45 Hourly Standby _____ T-Out 1120
 (F) Second Final Flow 62 Mileage 54RT 40.50 Comments _____
 (G) Final Shut-In 1172 Sampler _____
 (H) Final Hydrostatic 1793 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 1090.50 Total 1090.50 MP/DST Disc't _____

Approved By _____ Our Representative RAY SCHWAB Thank you

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65471

Well Name & No. Deutscher-Schoenthaler 1-3 Test No. 5 Date 7-2-2016
 Company Downing-Nelson Oil Co Inc Elevation 2203 KB 2195 GL
 Address PO Box 1019 Hays, Ko 67601
 Co. Rep / Geo. MARC Downing Rig Discovery rig 2
 Location: Sec. 3 Twp. 13^s Rge. 21^w Co. ELLIS State Ko

Interval Tested 3862-3869 Zone Tested Arbuckle
 Anchor Length 7 Drill Pipe Run 3660 Mud Wt. 9.3
 Top Packer Depth 3857 Drill Collars Run - Vis 55
 Bottom Packer Depth 3862 Wt. Pipe Run 186 WL 9.2
 Total Depth 3869 Chlorides 10000 ppm System LCM 1 1/2 #
 Blow Description TFP - SURFACE Blow Thru-out
ISTP - NO Blow
FFP - NO Blow
FSTP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Co</u>				
<u>10</u>	<u>50CM</u>		<u>3</u>		<u>97</u>

Rec Total 11 BHT 116 Gravity - API RW - @ - ° F Chlorides - ppm

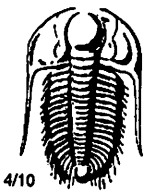
(A) Initial Hydrostatic 1849 Test 1050 T-On Location 1650
 (B) First Initial Flow 15 Jars _____ T-Started 1810
 (C) First Final Flow 21 Safety Joint _____ T-Open 2035
 (D) Initial Shut-In 1189 Circ Sub _____ T-Pulled 2235
 (E) Second Initial Flow 21 Hourly Standby _____ T-Out 0042
 (F) Second Final Flow 23 Mileage N/C Comments STAYED AT RIG mudded IN
 (G) Final Shut-In 1054 Sampler _____
 (H) Final Hydrostatic 1832 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 30 Ruined Packer _____
 Final Flow 30 Extra Copies _____
 Final Shut-In 30 Sub Total 0
 Total 1050
 MP/DST Disc't _____

Sub Total 1050

Approved By _____ Our Representative RAY SCHWAGER THANK YOU

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65472

Well Name & No. Deutscher-Schoenthaler 1-3 Test No. 6 Date 7-3-2016
 Company Downing-Nelson O.I.L Co Inc Elevation 2203 KB 2195 GL
 Address PO Box 1019 Hays, Ks 67601
 Co. Rep / Geo. MARC DOWNING Rig DISCOVERY rig 2
 Location: Sec. 3 Twp. 13ⁿ Rge. 21^w Co. ELLIS State Ks

Interval Tested 3869-3876 Zone Tested Arbuckle
 Anchor Length 7 Drill Pipe Run 3690 Mud Wt. 8.9
 Top Packer Depth 3864 Drill Collars Run - Vis 59
 Bottom Packer Depth 3869 Wt. Pipe Run 186 WL 9.2
 Total Depth 3876 Chlorides 10000 ppm System LCM 1 1/2 #

Blow Description IFP - Weak Blow thru-out surface to 1/2" Blow
ISIP - NO Blow
FFP - Weak Blow thru-out 1/4" to 3/4" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>CO</u>				
<u>20</u>	<u>HOCM</u>		<u>40</u>		<u>60</u>
Rec Total	<u>50</u>	BHT	<u>115</u>	Gravity	<u>36</u>

- (A) Initial Hydrostatic 1850
- (B) First Initial Flow 17
- (C) First Final Flow 26
- (D) Initial Shut-In 1223
- (E) Second Initial Flow 29
- (F) Second Final Flow 44
- (G) Final Shut-In 1218
- (H) Final Hydrostatic 1831

API RW - @ - ° F Chlorides - ppm

- Test 1050 T-On Location 0650
- Jars - T-Started 0720
- Safety Joint - T-Open 0930
- Circ Sub - T-Pulled 1130
- Hourly Standby - T-Out 1321
- Mileage N/C Comments Stayed AT Rig
- Sampler -
- Straddle -
- Ruined Shale Packer -
- Shale Packer -
- Ruined Packer -
- Extra Packer -
- Extra Copies -
- Extra Recorder - Sub Total 0
- Day Standby - Total 1050
- Accessibility - MP/DST Disc't -

Sub Total 1050

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

Approved By _____

Our Representative RAY SCHWAGER Thank you

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.

Marc A. Downing		Geologic Report		
Consulting Petroleum Geologist		Drilling Time and Sample Log		
Operator Downings-Nelson Oil Co., Inc.		Elevation 2205		
Lease Deutscher-Schoenthaler Unit No. 1-3		DF 2203		
API # 15-195-23006-0000		GL 2197		
Field Ellis West		Casing Record Surface 8 5/8" @ 220'		
Location 960' FNL & 1350' FEL		Production 5 1/2" @ 3930'		
Sec. 3 Twp. 13s Rge. 21w		Electrical Surveys		
County Trego State Kansas		CNDL, DIL, MEL		
Formation	Sample tops	Log Tops	Datum	Struct Comp
Top Anhydrite	1565	1564	+641	+5
Base Anhydrite	1605	1605	+600	+8
Topeka	3225	3225	-1020	+9
Heebner	3453	3454	-1249	+13
Toronto	3473	3474	-1269	+14
LKC	3486	3488	-1283	+13
BKC	3724	3724	-1519	+23
Marmaton	3789	3790	-1585	+23
Cherokee Sh	3825	3826	-1621	+23
Arbuckle	3850	3850	-1645	
Total Depth	3930	3931	-1726	
Reference Well For Structural Comparison	DNOCI 1286' FNL & 2030' FEL		Sec. 3-13s-21w	
Harold Deutscher #1-3				

Drilling Contractor	Discovery Drilling, Rig #2	
Commenced	6-25-16	Completed 7-4-16
Samples Saved From	3200	To RTD
Drilling Time Kept From	3100	To RTD
Samples Examined From	3200	To RTD
Geological Supervision From	3200	To RTD

Summary and Recommendations

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

Respectfully Submitted,

Marc A. Downing

