

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52764

4/10

Well Name & No. Goings #1 Test No. 3 Date 7-14-13
 Company Northern Lights Oil Co. LLC Elevation 2252 KB 2247 GL
 Address PO Box 164 Andover, KS 67002
 Co. Rep / Geo. Jeff Christian Rig Mallard #1
 Location: Sec. 20 Twp. 5s Rge. 23w Co. Norton State KS

Interval Tested 3476 - 3508 Zone Tested LKC "F"
 Anchor Length 32 Anchor 110 Tail Drill Pipe Run 3167 Mud Wt. 9.1
 Top Packer Depth 3471 - 3476 Drill Collars Run 298 Vis 56
 Bottom Packer Depth 3508 Wt. Pipe Run - WL 6.4
 Total Depth 3618 Chlorides 700 ppm System LCM 1

Blow Description IF: Blow built to BOB (11") in 8 min.
ISI: Blowback built to 1 1/2"
FF: Blow built to BOB in 10 1/2 min.
FSI: Blowback built to 5 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
107	CEO	12	86	-	2
130	MCO	4	63	-	33
168	GWOM	19	28	16	37
	GIP=325'				

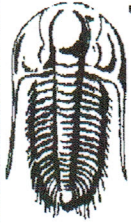
Rec Total 405 BHT _____ Gravity 36 API RW - @ _____ ° F Chlorides - ppm

(A) Initial Hydrostatic 1736 Test * T-On Location 21:10 7/13
 (B) First Initial Flow 34 Jars _____ T-Started 21:50
 (C) First Final Flow 134 Safety Joint _____ T-Open 00:33
 (D) Initial Shut-In 1105 Circ Sub *NA T-Pulled 3:18
 (E) Second Initial Flow 146 Hourly Standby _____ T-Out 5:40 7/14
 (F) Second Final Flow 179 Mileage 102RT Comments could not check
 (G) Final Shut-In 1057 Sampler _____ RW of water
 (H) Final Hydrostatic 1707 Straddle * Ruined Shale Packer _____
 Shale Packer * Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total _____
 Final Flow 30 Day Standby _____ Total _____
 Final Shut-In 60 Accessibility _____ MP/DST Disc't _____
 Sub Total _____

Approved By Jeff Christian Our Representative James Winder

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.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Northern Lights Oil Co. LLC

20-5s-23w Norton KS

PO Box 164
Andover Ks 67002

Goings #1

Job Ticket: 52764

DST#: 3

ATTN: Jeff Christenson

Test Start: 2013.07.13 @ 21:50:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
168.00	GWOM 37% <i>m</i> , 28% <i>o</i> , 19% <i>g</i> , 16% <i>w</i>	0.826
130.00	MCO 63% <i>o</i> , 33% <i>m</i> , 4% <i>g</i>	0.639
107.00	CGO 86% <i>o</i> , 12% <i>g</i> , 2% <i>m</i>	1.501
0.00	GIP = 325'	0.000

Total Length: 405.00 ft Total Volume: 2.966 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 37.6 api @ 76 deg F
Corrected Gravity = 36 api
Could not check RW of Water



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DRILL STEM TEST REPORT

Northern Lights Oil Co. LLC

20-5s-23w Norton KS

PO Box 164
Andover Ks 67002

Goings #1

Job Ticket: 52764

DST#: 3

ATTN: Jeff Christenson

Test Start: 2013.07.13 @ 21:50:00

GENERAL INFORMATION:

Formation: **LKC "F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:33:00

Time Test Ended: 05:43:15

Test Type: Conventional Straddle (Reset)

Tester: James Winder

Unit No: 57

Interval: 3476.00 ft (KB) To 3508.00 ft (KB) (TVD)

Reference Elevations: 2252.00 ft (KB)

Total Depth: 3618.00 ft (KB) (TVD)

2247.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8671

Inside

Press@RunDepth: 133.95 psig @ 3477.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.07.13

End Date:

2013.07.14

Last Calib.:

2013.07.14

Start Time: 21:50:00

End Time:

05:43:15

Time On Btm:

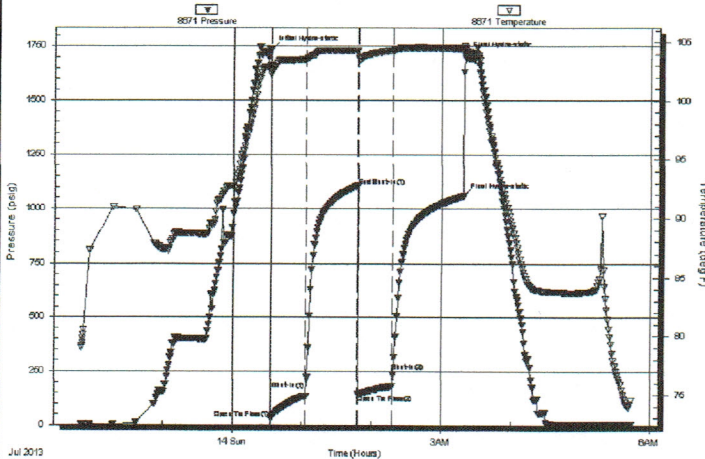
2013.07.14 @ 00:32:45

Time Off Btm:

2013.07.14 @ 03:18:45

TEST COMMENT: 30 - IF: Blow built to BOB (11") in 8 min.
45 - IS: Blow back built to 1 1/2"
30 - FF: Blow built to BOB in 10 1/2 min.
60 - FS: Blow back built to 5 1/2"

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1736.37	103.03	Initial Hydro-static
1	33.65	102.22	Open To Flow (1)
31	133.95	103.56	Shut-In(1)
75	1104.52	104.30	End Shut-In(1)
76	145.64	103.67	Open To Flow (2)
105	179.48	104.30	Shut-In(2)
166	1057.32	104.47	Final Hydro-static
167	1707.47	104.52	Final Hydro-static

Recovery

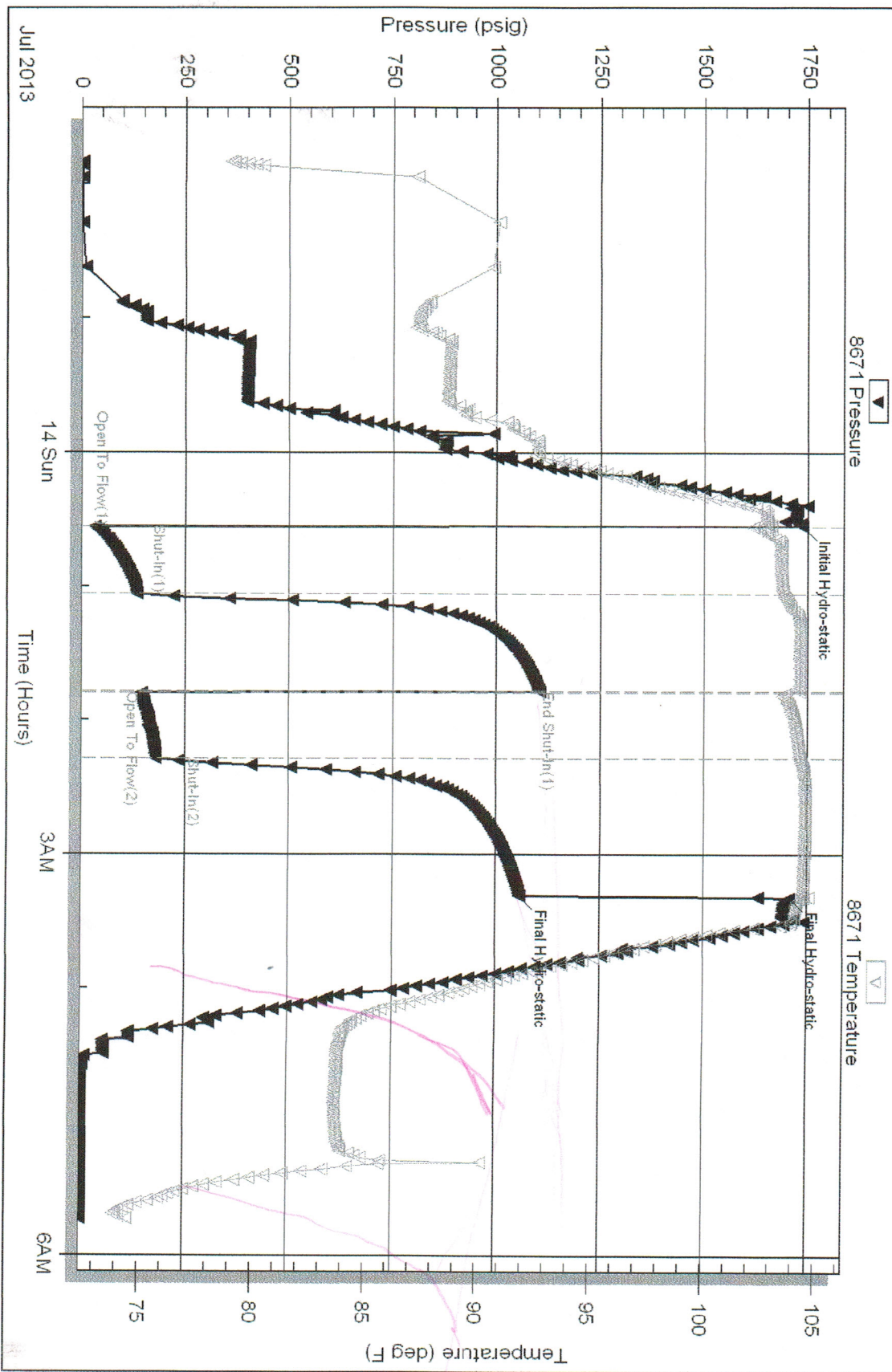
Length (ft)	Description	Volume (bbl)
168.00	GWOM 37% <i>m</i> , 28% <i>o</i> , 19% <i>g</i> , 16% <i>w</i>	0.83
130.00	MCO 63% <i>o</i> , 33% <i>m</i> , 4% <i>g</i>	0.64
107.00	CGO 86% <i>o</i> , 12% <i>g</i> , 2% <i>m</i>	1.50
0.00	GIP = 325'	0.00

* Recovery from multiple tests

Gas Rates

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

Pressure vs. Time



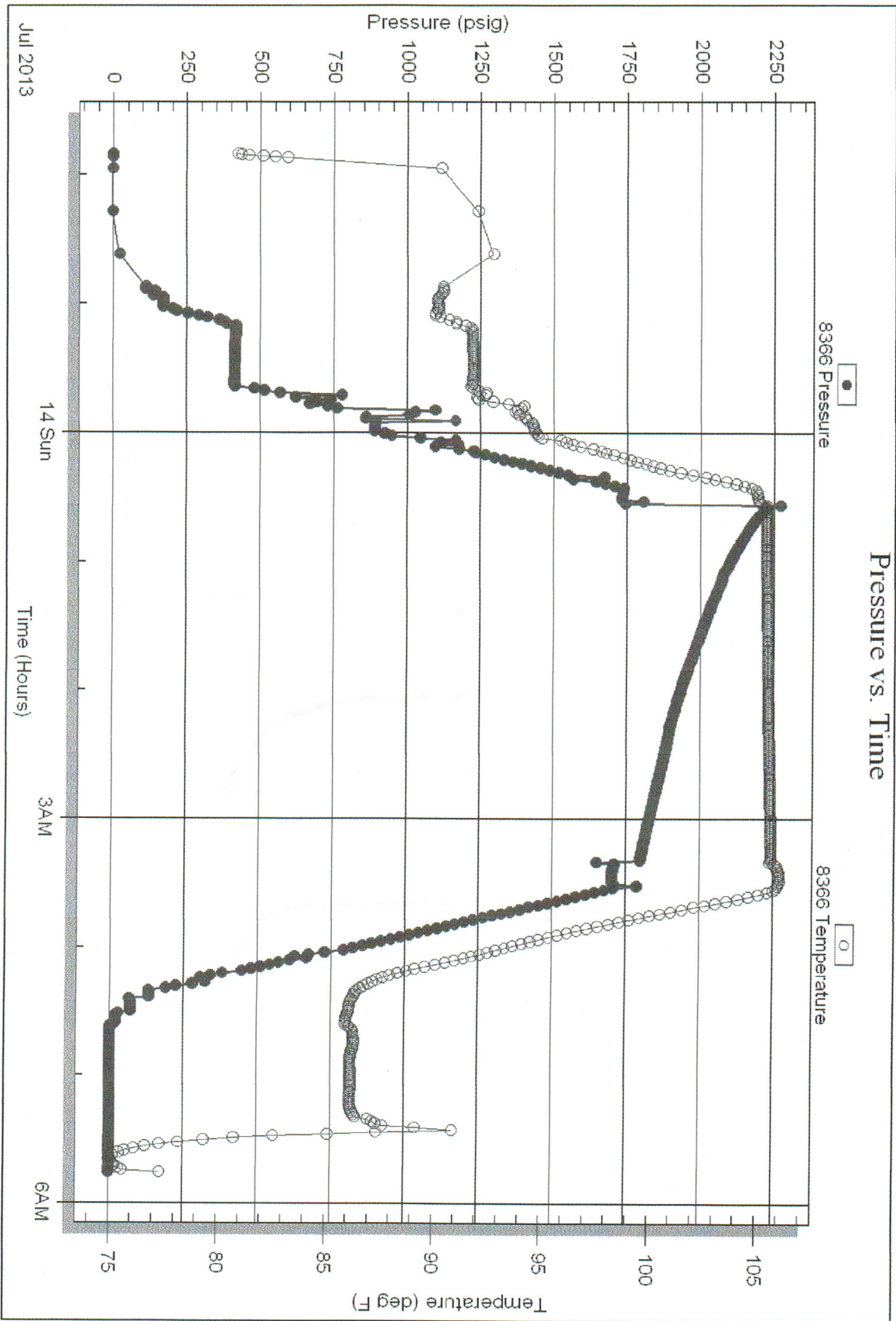
Serial #: 8366

Inside

Northern Lights Oil Co. LLC

Goings #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 52764

Printed: 2013.07.14 @ 06:24:02