



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Lisa #1-25

25 14s 19w Ellis,KS

Start Date: 2016.02.27 @ 01:11:00

End Date: 2016.02.27 @ 08:32:00

Job Ticket #: 64761 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.03.01 @ 11:28:37



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64761

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.02.27 @ 01:11:00

GENERAL INFORMATION:

Formation: **LKC " C "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:51:15

Time Test Ended: 08:32:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jim Svaty

Unit No: 76

Interval: 3407.00 ft (KB) To 3441.00 ft (KB) (TVD)

Reference Elevations: 2087.00 ft (KB)

Total Depth: 3441.00 ft (KB) (TVD)

2079.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8289

Outside

Press@RunDepth: 252.88 psig @ 3409.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.02.27

End Date:

2016.02.27

Last Calib.:

2016.02.27

Start Time: 01:11:02

End Time:

08:32:00

Time On Btm:

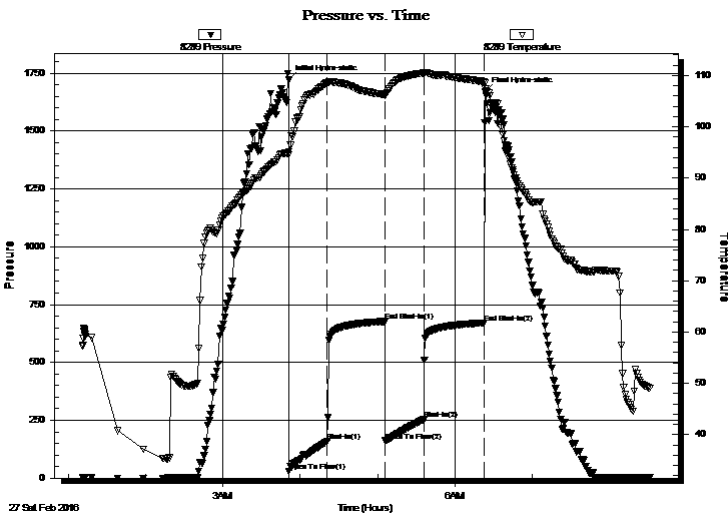
2016.02.27 @ 03:51:00

Time Off Btm:

2016.02.27 @ 06:23:45

TEST COMMENT: 30-IF- BOB in 12 min.
45-ISI- No Blow
30-FF- BOB in 12 1/2 min.
45-FSI- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1720.91	95.07	Initial Hydro-static
1	29.84	94.55	Open To Flow (1)
30	158.39	108.57	Shut-In(1)
75	677.23	106.27	End Shut-In(1)
75	161.27	106.01	Open To Flow (2)
105	252.88	110.46	Shut-In(2)
152	671.00	108.76	End Shut-In(2)
153	1668.52	107.48	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
490.00	MCW 10% m 90% w	6.59

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64761

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.02.27 @ 01:11:00

Tool Information

Drill Pipe:	Length: 3360.00 ft	Diameter: 3.80 inches	Volume: 47.13 bbl	Tool Weight:	2500.00 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume: 47.28 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	46000.00 lb
Depth to Top Packer:	3407.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	34.00 ft				
Tool Length:	55.00 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			3387.00	
Shut In Tool	5.00			3392.00	
Hydraulic tool	5.00			3397.00	
Packer	5.00			3402.00	21.00 Bottom Of Top Packer
Packer	5.00			3407.00	
Stubb	1.00			3408.00	
Perforations	1.00			3409.00	
Recorder	0.00	8789	Inside	3409.00	
Recorder	0.00	8289	Outside	3409.00	
Blank Spacing	29.00			3438.00	
Bullnose	3.00			3441.00	34.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64761

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.02.27 @ 01:11:00

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: 150000 ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.56 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2750.00 ppm

Filter Cake: 2.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
490.00	MCW 10%m 90%w	6.591

Total Length: 490.00 ft Total Volume: 6.591 bbf

Num Fluid Samples: 0

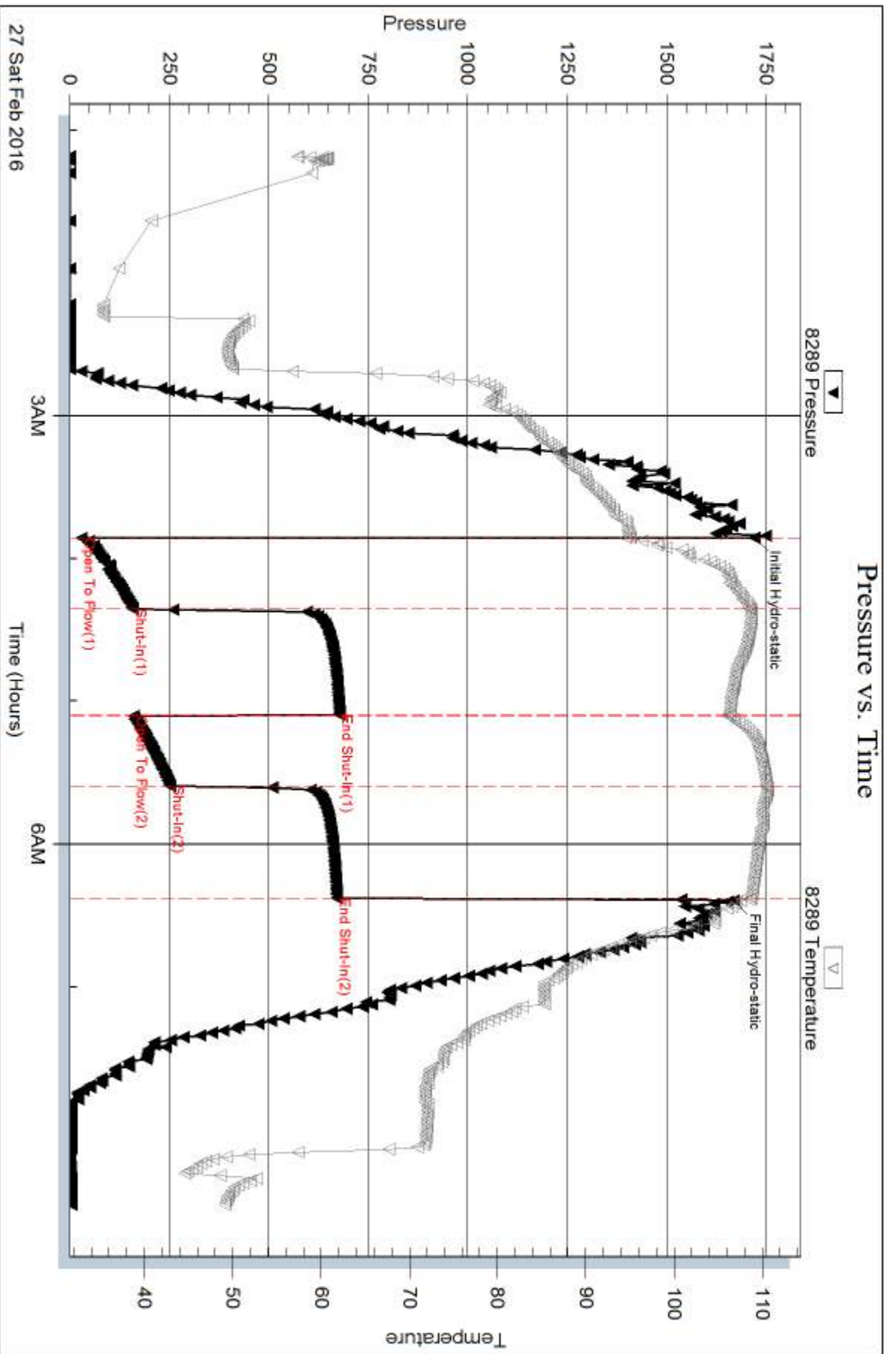
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .100 @ 43



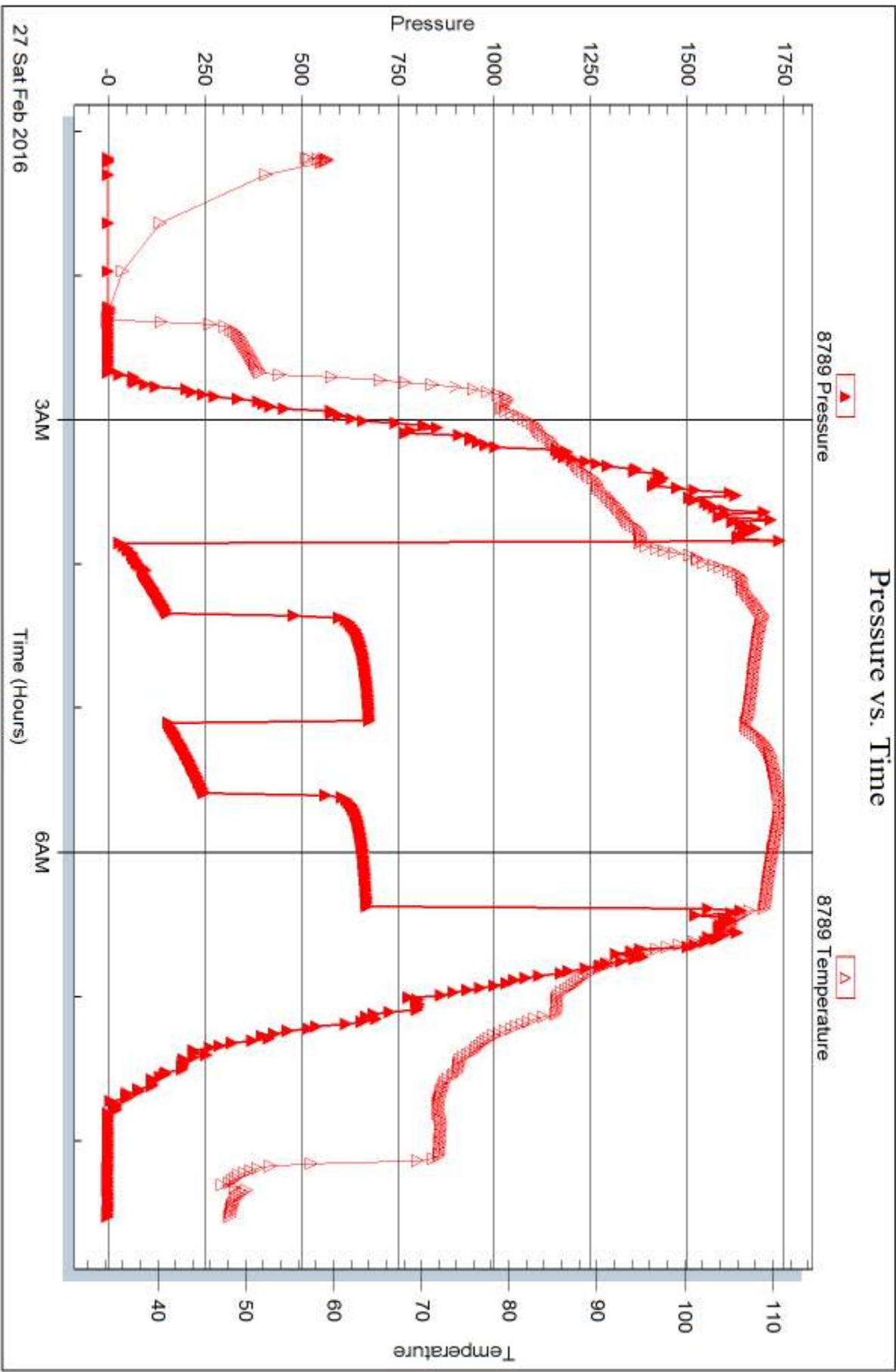
Serial #: 8789

Inside

Dow n/g-Nelson Oil Co Inc

Lisa #1-25

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64761

Printed: 2016.03.01 @ 11:28:39



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Lisa #1-25

25 14s 19w Ellis,KS

Start Date: 2016.02.28 @ 06:16:00

End Date: 2016.02.28 @ 13:20:00

Job Ticket #: 64762 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.03.01 @ 11:28:12



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64762

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.02.28 @ 06:16:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:14:30

Time Test Ended: 13:20:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

Interval: 3687.00 ft (KB) To 3731.00 ft (KB) (TVD)

Reference Elevations: 2087.00 ft (KB)

Total Depth: 3731.00 ft (KB) (TVD)

2079.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8789

Inside

Press@RunDepth: 98.70 psig @ 3695.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.02.28

End Date:

2016.02.28

Last Calib.:

2016.02.28

Start Time: 06:16:02

End Time:

13:20:00

Time On Btm:

2016.02.28 @ 08:14:00

Time Off Btm:

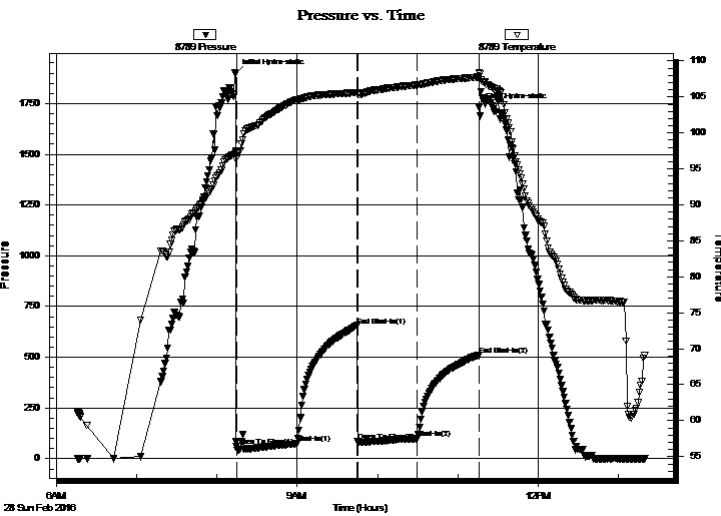
2016.02.28 @ 11:15:45

TEST COMMENT: 45-IF- BOB in 21 min.

45-ISI- No Blow

45-FF- Surface Blow Building to 3/4" In 4 min. Died Back in 8 min. Flushed FF-Surface Blow for 5 min. Then Died.

45-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1899.28	97.51	Initial Hydro-static
1	59.74	97.17	Open To Flow (1)
46	73.98	104.59	Shut-In(1)
91	655.91	105.62	End Shut-In(1)
91	83.55	105.39	Open To Flow (2)
136	98.70	106.67	Shut-In(2)
182	509.60	107.77	End Shut-In(2)
182	1729.97	108.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
130.00	CO 100%	1.54
75.00	OCM 5%o 95%m	1.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
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25 14s 19w Ellis,KS

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Lisa #1-25

Job Ticket: 64762

DST#: 2

ATTN: Marc Dow ning

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Time Tool Opened: 08:14:30

Time Test Ended: 13:20:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

Interval: 3687.00 ft (KB) To 3731.00 ft (KB) (TVD)

Reference Elevations: 2087.00 ft (KB)

Total Depth: 3731.00 ft (KB) (TVD)

2079.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8289 Outside

Press@RunDepth: psig @ 3695.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.02.28

End Date: 2016.02.28

Last Calib.: 2016.02.28

Start Time: 06:16:02

End Time: 13:20:00

Time On Btm:

Time Off Btm:

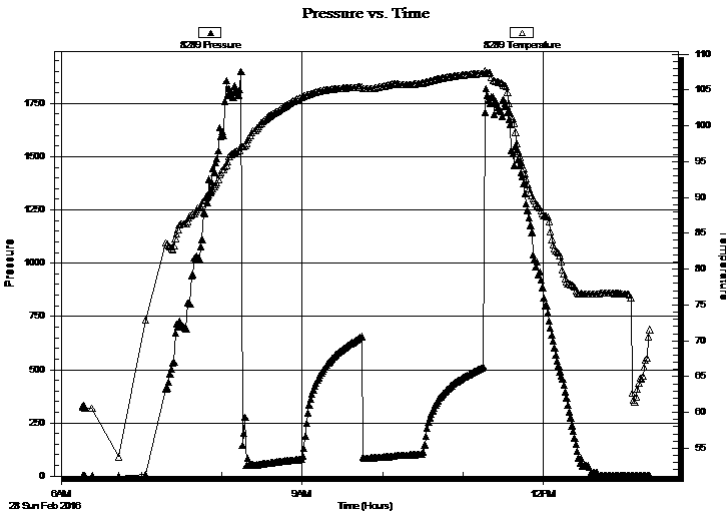
TEST COMMENT: 45-IF- BOB in 21 min.

45-ISI- No Blow

45-FF- Surface Blow Building to 3/4" In 4 min. Died Back in 8 min. Flushed FF-Surface Blow for 5 min. Then Died.

45-FSI- No Blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
130.00	CO 100%	1.54
75.00	OCM 5%o 95%m	1.05

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

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64762

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.02.28 @ 06:16:00

Tool Information

Drill Pipe:	Length: 3645.00 ft	Diameter: 3.80 inches	Volume: 51.13 bbl	Tool Weight: 2500.00 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 51.28 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3687.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	44.00 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			3667.00	
Shut In Tool	5.00			3672.00	
Hydraulic tool	5.00			3677.00	
Packer	5.00			3682.00	21.00 Bottom Of Top Packer
Packer	5.00			3687.00	
Stubb	1.00			3688.00	
Perforations	6.00			3694.00	
Change Over Sub	1.00			3695.00	
Recorder	0.00	8789	Inside	3695.00	
Recorder	0.00	8289	Outside	3695.00	
Blank Spacing	32.00			3727.00	
Change Over Sub	1.00			3728.00	
Bullnose	3.00			3731.00	44.00 Bottom Packers & Anchor

Total Tool Length: 65.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64762

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.02.28 @ 06:16:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 2.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
130.00	CO 100%	1.541
75.00	OCM 5%o 95%m	1.052

Total Length: 205.00 ft

Total Volume: 2.593 bbl

Num Fluid Samples: 0

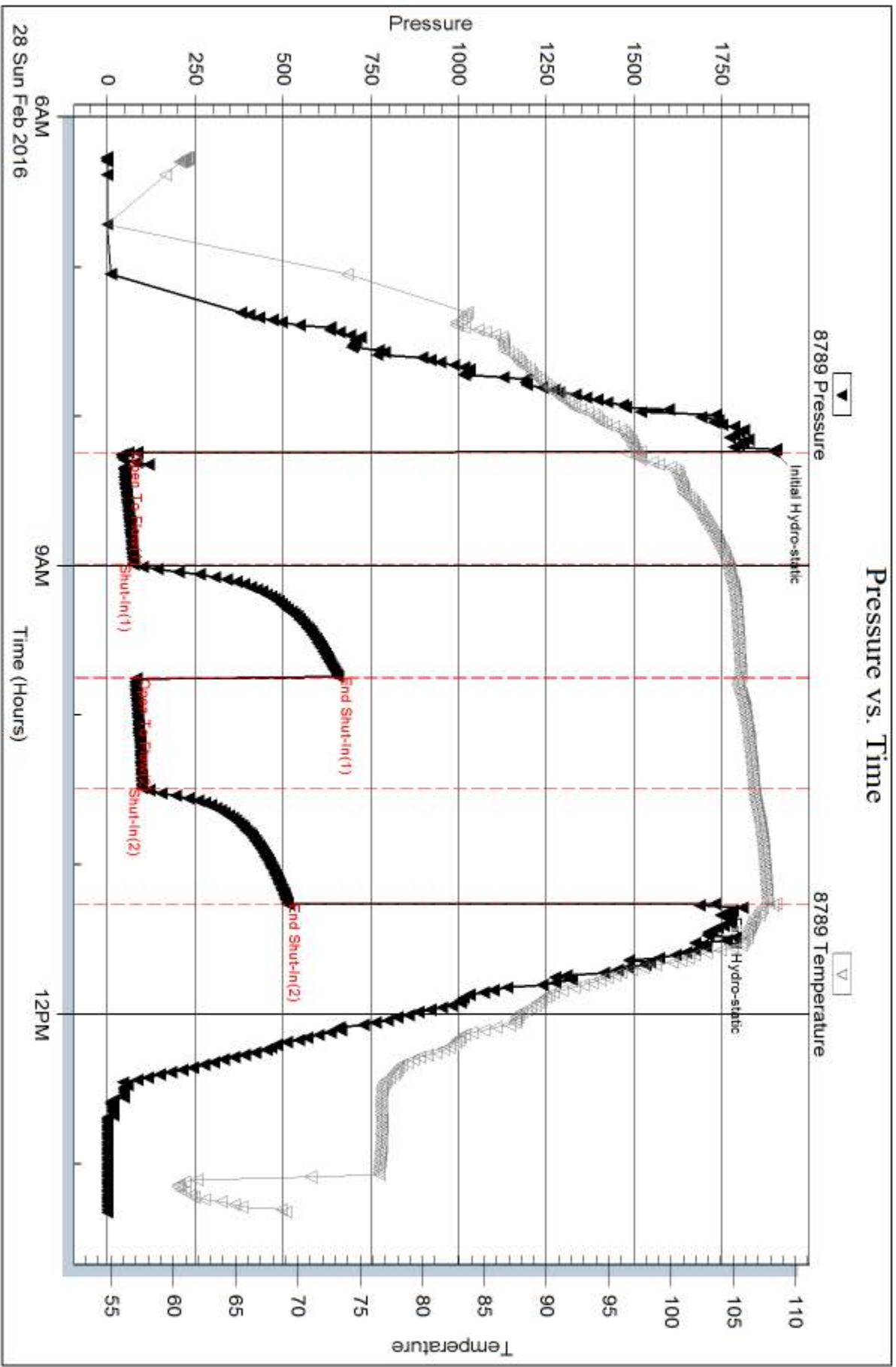
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

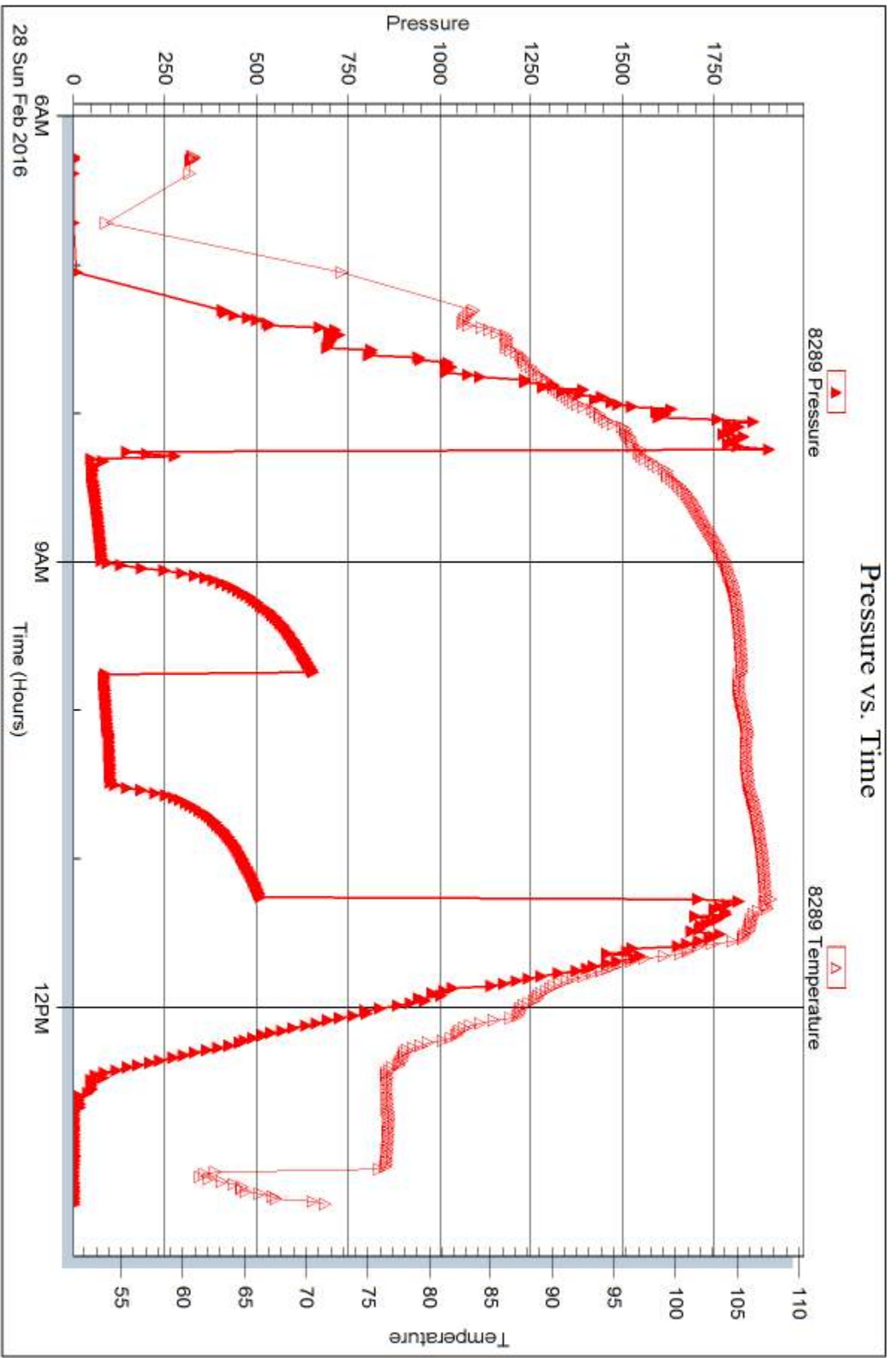


Serial #: 8289

Outside Dow nng-Nelson Oil Co Inc

Lisa #1-25

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 64762

Printed: 2016.03.01 @ 11:28:14



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Lisa #1-25

25 14s 19w Ellis,KS

Start Date: 2016.02.28 @ 18:50:00

End Date: 2016.02.29 @ 02:43:00

Job Ticket #: 64763 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.03.01 @ 11:27:45



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64763

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.02.28 @ 18:50:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:01:15

Time Test Ended: 02:43:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

Interval: 3731.00 ft (KB) To 3739.00 ft (KB) (TVD)

Reference Elevations: 2087.00 ft (KB)

Total Depth: 3739.00 ft (KB) (TVD)

2079.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8289 Outside

Press@RunDepth: 535.32 psig @ 3732.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.02.28

End Date:

2016.02.29

Last Calib.:

2016.02.29

Start Time: 18:50:02

End Time:

02:43:00

Time On Btm:

2016.02.28 @ 21:01:00

Time Off Btm:

2016.02.29 @ 00:02:00

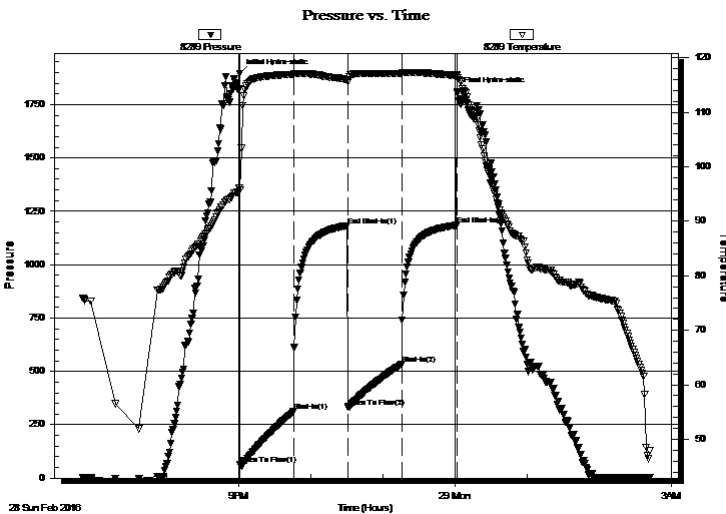
TEST COMMENT: 45-IF- BOB in 8 1/2 min Died Back in 31 min. Final Blow 7"

45-ISI- No Blow

45-FF- Surface Blow Building to 9 1/4" In 16 min. Died Back in 22 min. Final Blow 2"

45-FSI- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1896.50	96.11	Initial Hydro-static
1	64.55	95.84	Open To Flow (1)
45	312.93	116.95	Shut-In(1)
90	1183.38	115.98	End Shut-In(1)
90	334.47	115.58	Open To Flow (2)
135	535.32	117.14	Shut-In(2)
181	1184.93	116.77	End Shut-In(2)
181	1810.86	116.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
800.00	Water 100%	10.94
320.00	Oil Speck Water 100%	4.49
40.00	CO 100%	0.56

* 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

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64763

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.02.28 @ 18:50:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:01:15

Time Test Ended: 02:43:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

Interval: 3731.00 ft (KB) To 3739.00 ft (KB) (TVD)

Reference Elevations: 2087.00 ft (KB)

Total Depth: 3739.00 ft (KB) (TVD)

2079.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8789 Inside

Press@RunDepth: psig @ 3732.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.02.28

End Date:

2016.02.29

Last Calib.:

2016.02.29

Start Time: 18:50:02

End Time:

02:42:45

Time On Btm:

Time Off Btm:

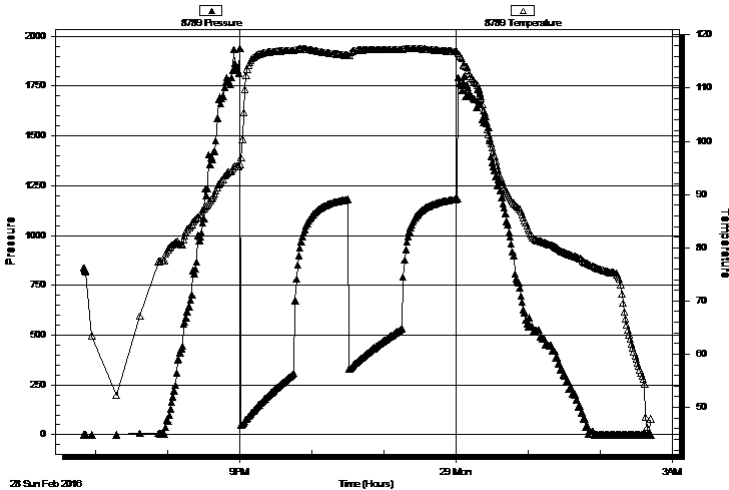
TEST COMMENT: 45-IF- BOB in 8 1/2 min Died Back in 31 min. Final Blow 7"

45-ISI- No Blow

45-FF- Surface Blow Building to 9 1/4" In 16 min. Died Back in 22 min. Final Blow 2"

45-FSI- No Blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
800.00	Water 100%	10.94
320.00	Oil Speck Water 100%	4.49
40.00	CO 100%	0.56

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

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64763

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.02.28 @ 18:50:00

Tool Information

Drill Pipe:	Length: 3709.00 ft	Diameter: 3.80 inches	Volume: 52.03 bbl	Tool Weight:	2500.00 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 52.18 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3731.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	8.00 ft				
Tool Length:	29.00 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			3711.00	
Shut In Tool	5.00			3716.00	
Hydraulic tool	5.00			3721.00	
Packer	5.00			3726.00	21.00 Bottom Of Top Packer
Packer	5.00			3731.00	
Stubb	1.00			3732.00	
Recorder	0.00	8789	Inside	3732.00	
Recorder	0.00	8289	Outside	3732.00	
Perforations	4.00			3736.00	
Bullnose	3.00			3739.00	8.00 Bottom Packers & Anchor
Total Tool Length:	29.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64763

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.02.28 @ 18:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

46000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
800.00	Water 100%	10.940
320.00	Oil Speck Water 100%	4.489
40.00	CO 100%	0.561

Total Length: 1160.00 ft Total Volume: 15.990 bbl

Num Fluid Samples: 0

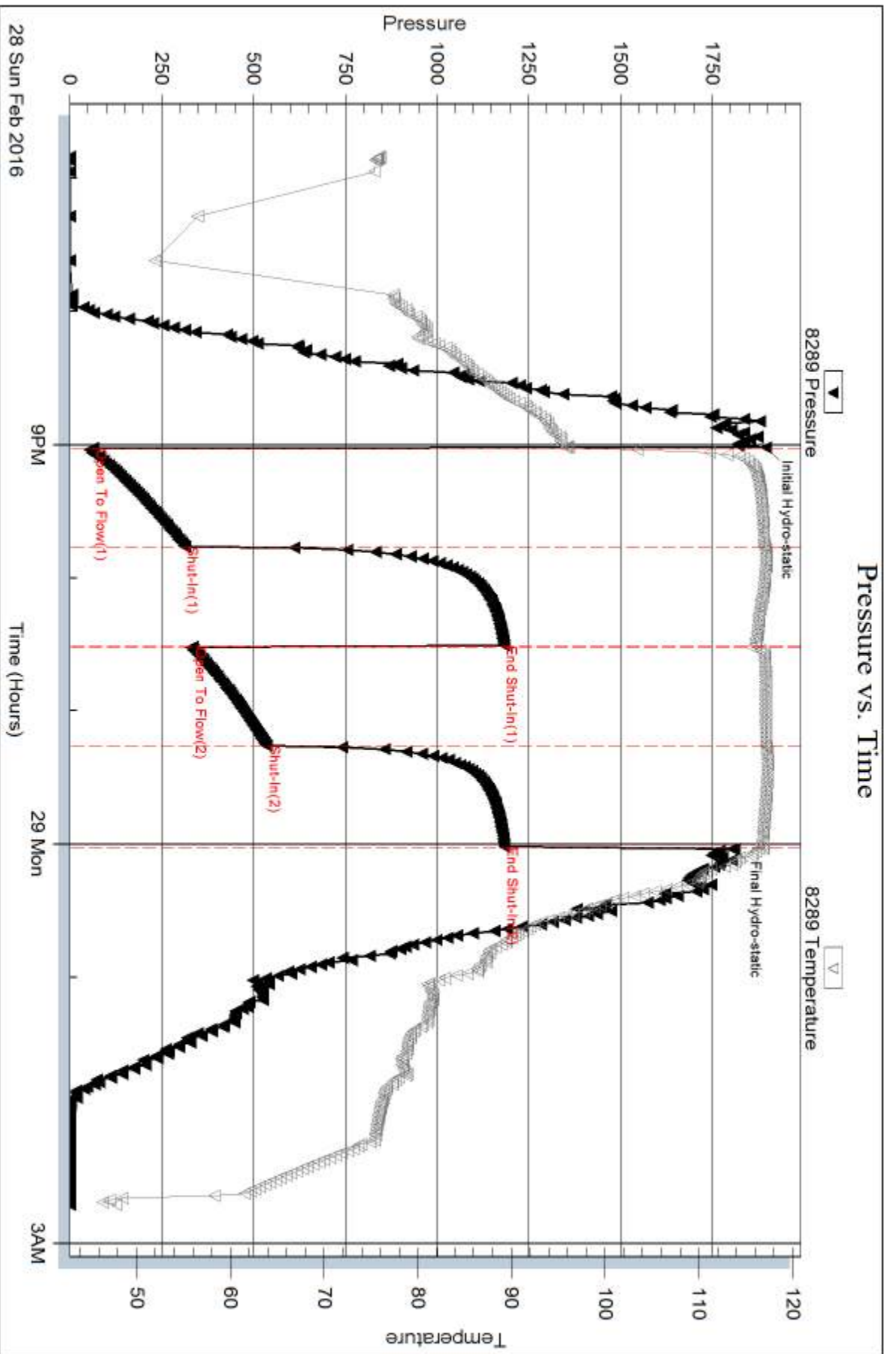
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .275 @ 41



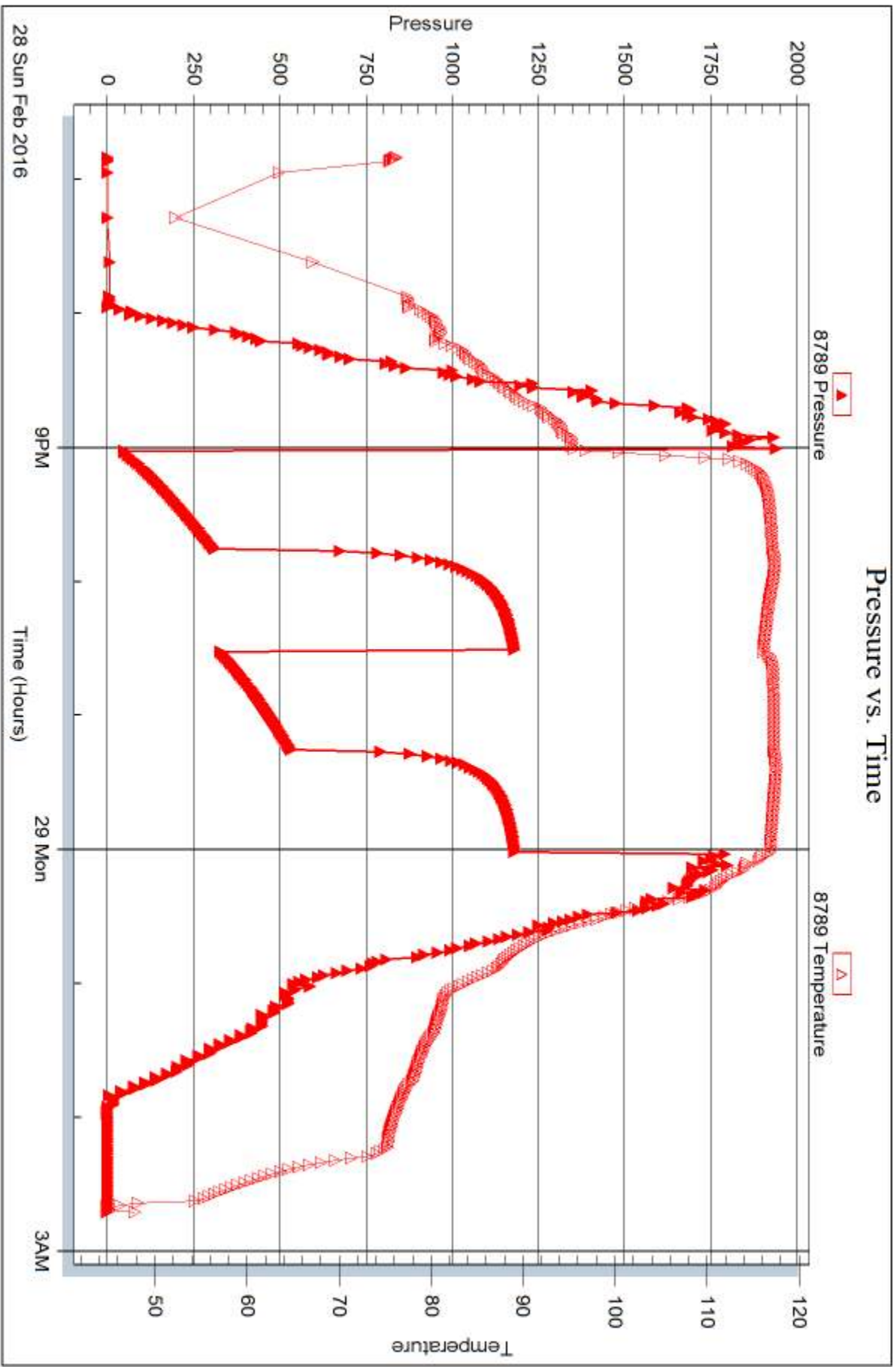
Serial #: 8789

Inside

Dow nging-Nelson Oil Co Inc

Lisa #1-25

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 64763

Printed: 2016.03.01 @ 11:27:47



DRILL STEM TEST REPORT

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

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Lisa #1-25

25 14s 19w Ellis,KS

Start Date: 2016.02.29 @ 13:30:00

End Date: 2016.02.29 @ 20:30:00

Job Ticket #: 64764 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2016.03.01 @ 11:26:51



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64764

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.02.29 @ 13:30:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:31:00

Time Test Ended: 20:30:00

Test Type: Conventional Straddle (Reset)

Tester: Jim Svaty

Unit No: 76

Interval: 3689.00 ft (KB) To 3734.00 ft (KB) (TVD)

Reference Elevations: 2087.00 ft (KB)

Total Depth: 3789.00 ft (KB) (TVD)

2079.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8289 Outside

Press@RunDepth: 94.48 psig @ 3692.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.02.29

End Date:

2016.02.29

Last Calib.:

2016.02.29

Start Time: 13:30:02

End Time:

20:30:00

Time On Btm:

2016.02.29 @ 15:30:45

Time Off Btm:

2016.02.29 @ 18:31:45

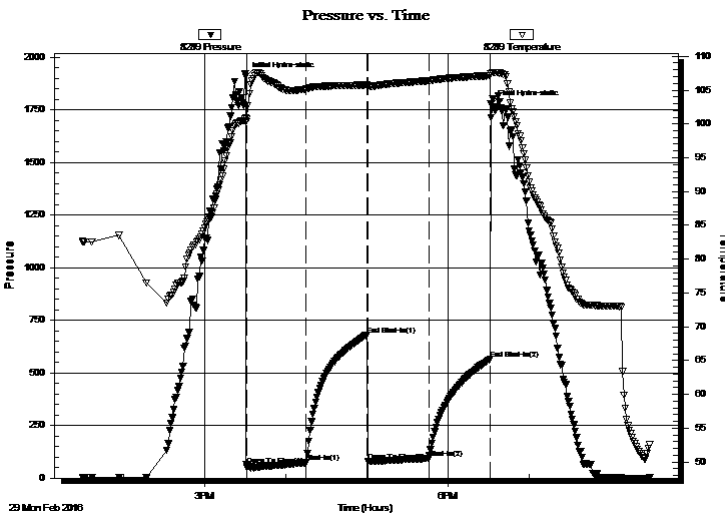
TEST COMMENT: 45-IF- Surface Blow Building to 2 1/2in. In 3min. Died Back in 8min.

45-ISI- No Blow

45-FF- 3/4in Blow in 2min. Died Back in 7min.

45-FSI- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1910.68	100.90	Initial Hydro-static
1	63.02	100.36	Open To Flow (1)
45	73.31	105.16	Shut-In(1)
90	681.23	105.77	End Shut-In(1)
90	80.51	105.59	Open To Flow (2)
135	94.48	106.38	Shut-In(2)
181	564.08	107.13	End Shut-In(2)
181	1777.14	107.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
126.00	OWCM 20%o 20%w 60%m	1.49
10.00	CO 100%	0.14

* 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

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64764

DST#: 4

ATTN: Marc Dow ning

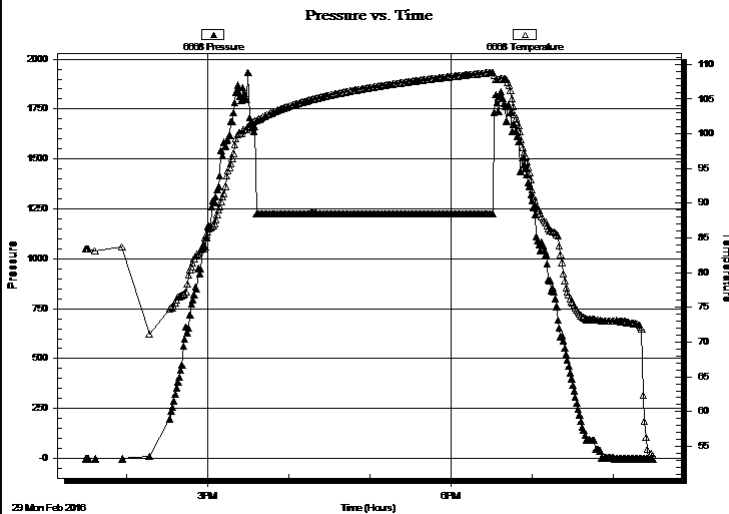
Test Start: 2016.02.29 @ 13:30:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:31:00
 Time Test Ended: 20:30:00
 Interval: **3689.00 ft (KB) To 3734.00 ft (KB) (TVD)**
 Total Depth: 3789.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Reset)
 Tester: Jim Svaty
 Unit No: 76
 Reference Elevations: 2087.00 ft (KB)
 2079.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6668 Below (Straddle)
 Press@RunDepth: psig @ 3753.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.02.29 End Date: 2016.02.29 Last Calib.: 2016.02.29
 Start Time: 13:30:02 End Time: 20:29:45 Time On Btm:
 Time Off Btm:

TEST COMMENT: 45-IF- Surface Blow Building to 2 1/2in. In 3min. Died Back in 8min.
 45-ISI- No Blow
 45-FF- 3/4in Blow in 2min. Died Back in 7min.
 45-FSI- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
126.00	OWCM 20%o 20%w 60%m	1.49
10.00	CO 100%	0.14

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64764

DST#: 4

ATTN: Marc Dow ning

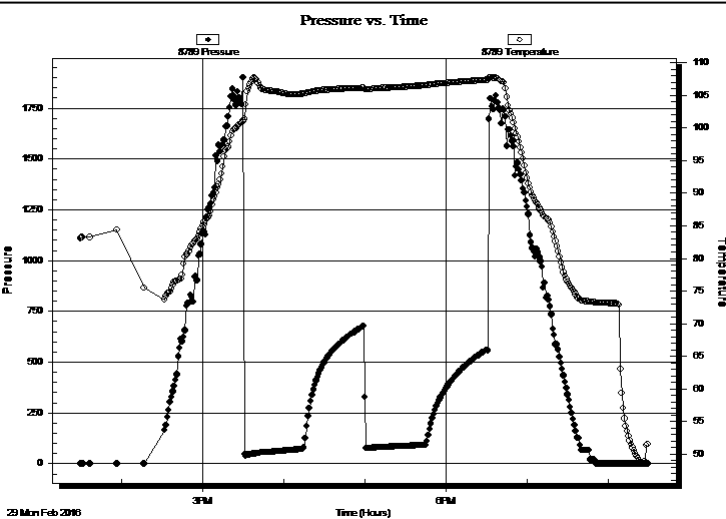
Test Start: 2016.02.29 @ 13:30:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Straddle (Reset)
 Time Tool Opened: 15:31:00
 Tester: Jim Svaty
 Time Test Ended: 20:30:00
 Unit No: 76
 Interval: **3689.00 ft (KB) To 3734.00 ft (KB) (TVD)**
 Reference Elevations: 2087.00 ft (KB)
 Total Depth: 3789.00 ft (KB) (TVD) 2079.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 8789 Inside
 Press@RunDepth: psig @ 3692.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.02.29 End Date: 2016.02.29 Last Calib.: 2016.02.29
 Start Time: 13:30:02 End Time: 20:29:45 Time On Btm:
 Time Off Btm:

TEST COMMENT: 45-IF- Surface Blow Building to 2 1/2in. In 3min. Died Back in 8min.
 45-ISI- No Blow
 45-FF- 3/4in Blow in 2min. Died Back in 7min.
 45-FSI- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
126.00	OWCM 20%o 20%w 60%m	1.49
10.00	CO 100%	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

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64764

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.02.29 @ 13:30:00

Tool Information

Drill Pipe:	Length: 3643.00 ft	Diameter: 3.80 inches	Volume: 51.10 bbl	Tool Weight: 2500.00 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 51.25 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3689.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	3734.00 ft			
Interval betw een Packers:	45.00 ft			
Tool Length:	121.00 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			3669.00	
Shut In Tool	5.00			3674.00	
Hydraulic tool	5.00			3679.00	
Packer	5.00			3684.00	21.00 Bottom Of Top Packer
Packer	5.00			3689.00	
Stubb	1.00			3690.00	
Perforations	1.00			3691.00	
Change Over Sub	1.00			3692.00	
Recorder	0.00	8789	Inside	3692.00	
Recorder	0.00	8289	Outside	3692.00	
Blank Spacing	32.00			3724.00	
Change Over Sub	1.00			3725.00	
Perforations	5.00			3730.00	
Blank Off Sub	1.00			3731.00	
Blank Spacing	3.00			3734.00	45.00 Tool Interval
Packer	2.00			3736.00	
Perforations	16.00			3752.00	
Change Over Sub	1.00			3753.00	
Recorder	0.00	6668	Below	3753.00	
Blank Spacing	32.00			3785.00	
Change Over Sub	1.00			3786.00	
Bullnose	3.00			3789.00	55.00 Bottom Packers & Anchor

Total Tool Length: 121.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

25 14s 19w Ellis,KS

PO Box 1019
Hays KS 67601

Lisa #1-25

Job Ticket: 64764

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.02.29 @ 13:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

45000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
126.00	OWCM 20%o 20%w 60%m	1.485
10.00	CO 100%	0.140

Total Length: 136.00 ft

Total Volume: 1.625 bbf

Num Fluid Samples: 0

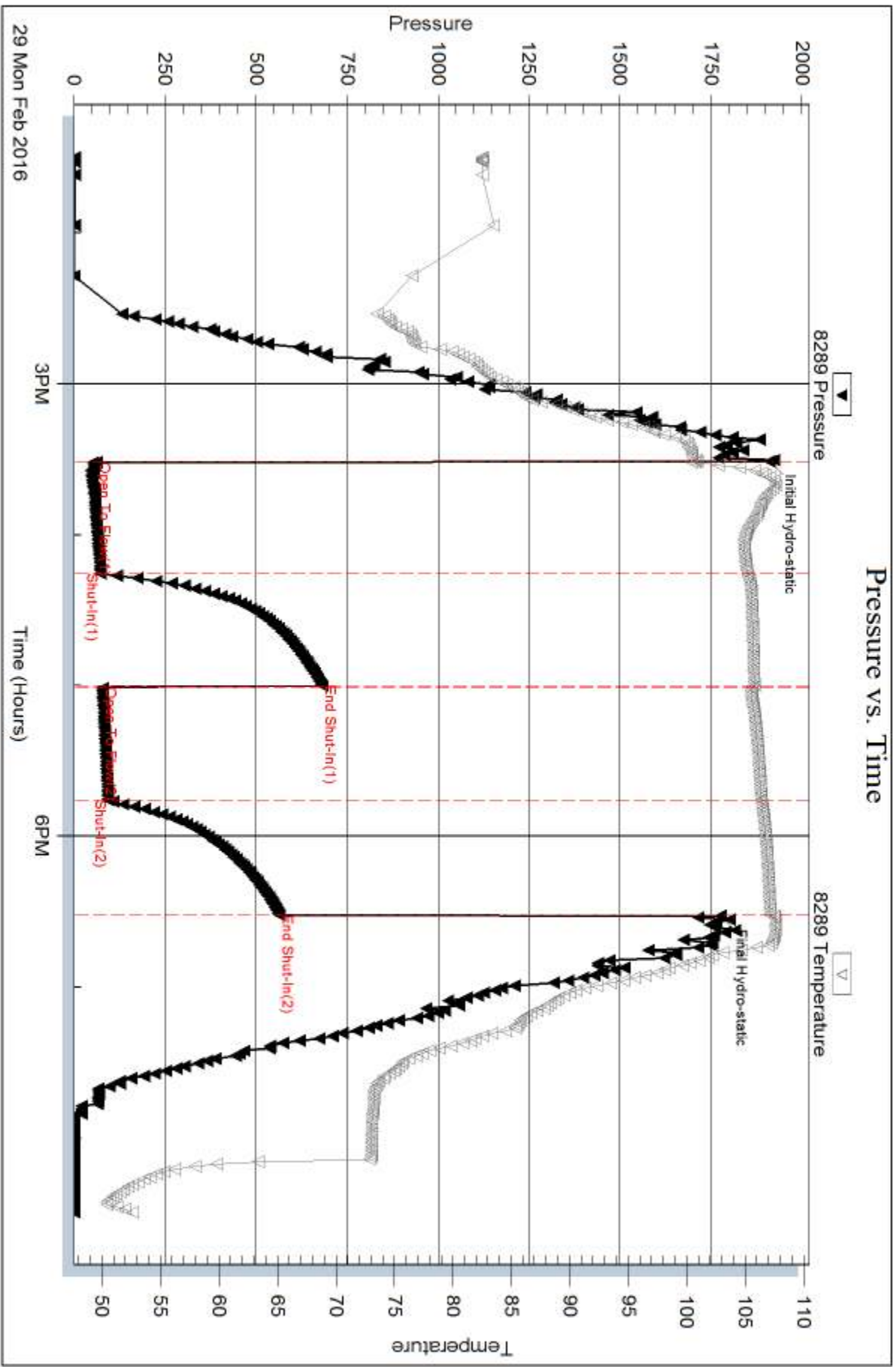
Num Gas Bombs: 0

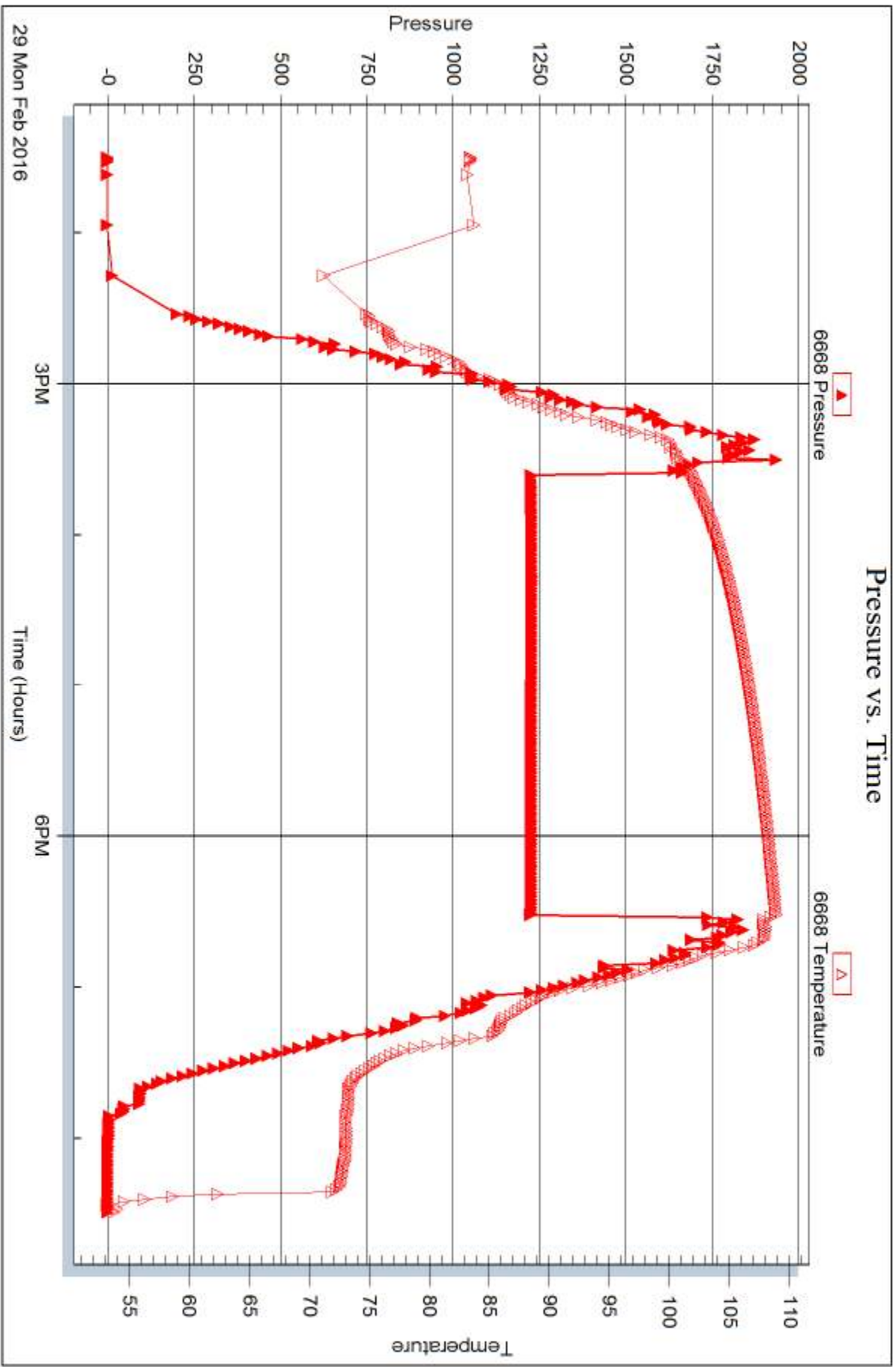
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Laboratory Name:

Laboratory Location:

Recovery Comments: .230 @ 50





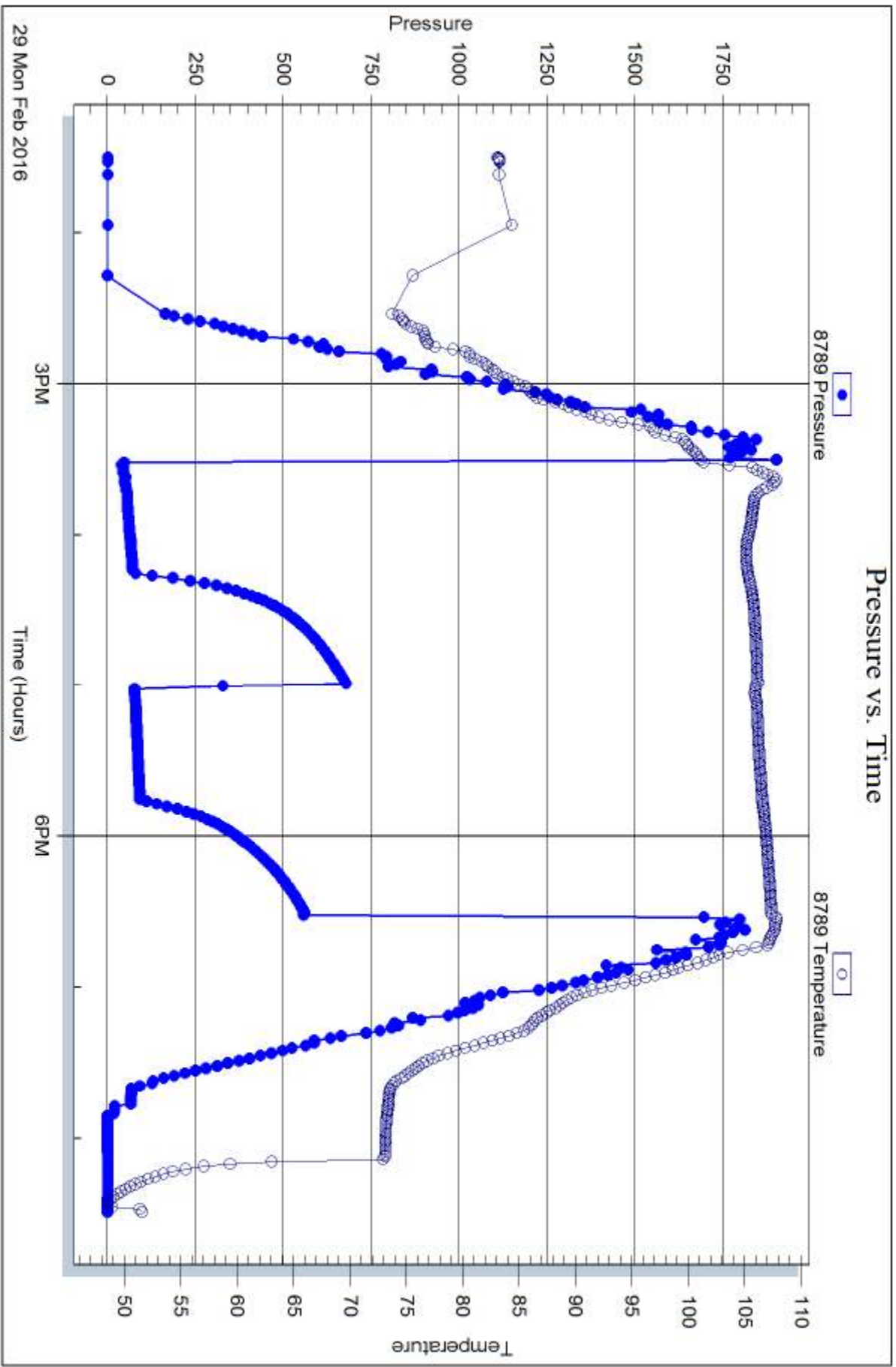
Serial #: 8789

Inside

Dow nrg-Nelson Oil Co Inc

Lisa #1-25

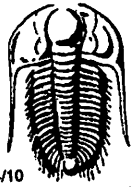
DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 64764

Printed: 2016.03.01 @ 11:26:53



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64761

Well Name & No. LISA # 1-25 Test No. 1 Date 2-26-16
 Company Downing-Nelson Oil Co Inc. Elevation 2087 KB 2079 GL
 Address P.O. Box 1019 Hays KS 67601-
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 25 Twp. 14^s Rge. 19^w Co. Ellis State KS

Interval Tested 3407-3441 Zone Tested LKC "C"
 Anchor Length 34 Drill Pipe Run 3360 Mud Wt. 8.7
 Top Packer Depth 3402 Drill Collars Run 31 Vis 69
 Bottom Packer Depth 3407 Wt. Pipe Run 0 WL 7.6
 Total Depth 3441 Chlorides 2750 ppm System LCM 2.5

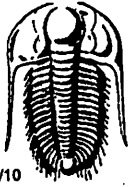
Blow Description IF - BOB in 12min.
ISI - No Blow
FF - BOB in 12 1/2 min.
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>490</u>	<u>MCW</u>		<u>90</u>	<u>10</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 490 BHT 109 Gravity _____ API RW 100 @ 43 °F Chlorides 150,000 ppm
 (A) Initial Hydrostatic 1720 Test 1050 T-On Location 23:11
 (B) First Initial Flow 29 Jars _____ T-Started 01:11
 (C) First Final Flow 158 Safety Joint _____ T-Open 03:51
 (D) Initial Shut-In 677 Circ Sub _____ T-Pulled 06:21
 (E) Second Initial Flow 161 Hourly Standby _____ T-Out 08:32
 (F) Second Final Flow 252 Mileage 21 RT 15.75 Comments _____
 (G) Final Shut-In 671 Sampler _____
 (H) Final Hydrostatic 1668 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 45 Extra Packer _____ Extra Copies _____
 Final Flow 30 Extra Recorder _____ Sub Total 0
 Final Shut-In 45 Day Standby _____ Total 1065.75
 Sub Total 1065.75 Accessibility _____ MP/DST Disc't _____

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged or 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. 64762

Well Name & No. LISA # 1-25 Test No. 2 Date 2-28-16
 Company Downing-Nelson Oil Co. Inc. Elevation 2087 KB 2079 GL
 Address P.O. Box 1019 Hays KS 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 25 Twp. 14S Rge. 19W Co. Ellis State KS

Interval Tested 3687-3731 Zone Tested Arbuckle
 Anchor Length 44 Drill Pipe Run 3645 Mud Wt. 9
 Top Packer Depth 3682 Drill Collars Run 31 Vis 60
 Bottom Packer Depth 3687 Wt. Pipe Run 8 WL 8
 Total Depth 3731 Chlorides 5000 ppm System LCM 2 1/2

Blow Description IF - BOB in 2 min.
ISI - No Blow
FF - Surface Blow Building to 3/4 in. In 4 min. Died Back 8 min.
FSI - No Blow - Flushed FF. Surface Blow for 5 min. then Died.

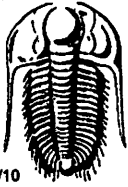
Rec	Feet of	%gas	%oil	%water	%mud
<u>130</u>	<u>CO</u>		<u>100</u>		
<u>75</u>	<u>OCM</u>		<u>5</u>		<u>95</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 205 BHT 108 Gravity 24 API RW @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 1899 Test 1050 T-On Location 05:40
 (B) First Initial Flow 59 Jars _____ T-Started 06:16
 (C) First Final Flow 73 Safety Joint _____ T-Open 08:15
 (D) Initial Shut-In 655 Circ Sub _____ T-Pulled 11:15
 (E) Second Initial Flow 83 Hourly Standby _____ T-Out 13:20
 (F) Second Final Flow 98 Mileage 15.75 Comments _____
 (G) Final Shut-In 509 Sampler _____
 (H) Final Hydrostatic 1729 Straddle _____ Ruined Shale Packer _____

Initial Open 45 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 45 Extra Packer _____ Extra Copies _____
 Final Flow 45 Extra Recorder _____ Sub Total 0
 Final Shut-In 45 Day Standby _____ Total 1065.75
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1065.75

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged or 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. 64763

Well Name & No. LISA #1-25 Test No. 3 Date 2-28-16
 Company Downing-Nelson Oil Co INC Elevation 2087 KB 2079 GL
 Address P.O. Box 1019 HAYS KS 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #3
 Location: Sec. 25 Twp. 14^s Rge. 19^w Co. Ellis State KS

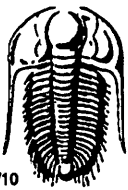
Interval Tested 3731-3739 Zone Tested Arbuckle
 Anchor Length 8 Drill Pipe Run 3709 Mud Wt. 9.4
 Top Packer Depth 3726 Drill Collars Run 31 Vis 56
 Bottom Packer Depth 3731 Wt. Pipe Run 0 WL 8.8
 Total Depth 3739 Chlorides 8000 ppm System LCM 2

Blow Description IF - BOB in 8 1/2 min, Died Back in 3 min, Final Blow Tin.
ISI - No Blow
FF - Surface Blow Building to 9 1/4 in, 16 min, Died Back 22 min Final Tin.
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>800</u>	<u>Water</u>		<u>100</u>		
<u>320</u>	<u>Oil Speck Water</u>		<u>100</u>		
<u>40</u>	<u>CO</u>		<u>100</u>		

Rec Total 1160 BHT 117 Gravity 24 API RW 275 @ 41 °F Chlorides 46000 ppm
 (A) Initial Hydrostatic 1896 Test 1050 T-On Location 18:48
 (B) First Initial Flow 64 Jars _____ T-Started 18:50
 (C) First Final Flow 312 Safety Joint _____ T-Open 21:01
 (D) Initial Shut-In 1183 Circ Sub _____ T-Pulled 00:01
 (E) Second Initial Flow 334 Hourly Standby _____ T-Out 02:43
 (F) Second Final Flow 535 Mileage 15.75 Comments _____
 (G) Final Shut-In 1184 Sampler _____
 (H) Final Hydrostatic 1810 Straddle _____
 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 45 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1065.75
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 45 Sub Total 1065.75

Approved By _____ Our Representative [Signature]
 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. 64764

Well Name & No. LISA # 1-25 Test No. 4 Date 2-19-16
 Company Downing-Nelson Oil Co. Inc Elevation 2087 KB 2079 GL
 Address P.O. Box 1019 Hays KS 67601
 Co. Rep / Geo. MARC DOWNING Rig Discovery #3
 Location: Sec. 25 Twp. 14^S Rge. 19^W Co. Ellis State KS

Interval Tested 3689-3734 Zone Tested Arbuckle
 Anchor Length 45 (SSTP) Drill Pipe Run 3643 Mud Wt. 9.4
 Top Packer Depth 3689 Drill Collars Run 31 Vis 54
 Bottom Packer Depth 3734 Wt. Pipe Run 0 WL 9.6
 Total Depth 3789 Chlorides 10500 ppm System LCM 2
 Blow Description IF - Surface Blow Building to 2 1/2 in. in 3 min. Died Back in 8 min.
ISI - No Blow
FF - 3/4 in Blow in 2 min. Died Back in 7 min.
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>126</u>	<u>OWCM</u>	<u>20</u>	<u>20</u>	<u>60</u>	
<u>10</u>	<u>CO</u>	<u>100</u>			

Rec Total 136 BHT 107 Gravity 24 API RW 290 @ 50 °F Chlorides 45000 ppm
 (A) Initial Hydrostatic 1910 Test 1050 T-On Location 13:25
 (B) First Initial Flow 63 Jars _____ T-Started 12:30
 (C) First Final Flow 73 Safety Joint _____ T-Open 15:31
 (D) Initial Shut-In 681 Circ Sub _____ T-Pulled 18:31
 (E) Second Initial Flow 80 Hourly Standby _____ T-Out 20:30
 (F) Second Final Flow 94 Mileage 15.75 Comments _____
 (G) Final Shut-In 564 Sampler _____
 (H) Final Hydrostatic 1777 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1665.75
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1665.75

Approved By _____ Our Representative [Signature]
 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.