



DRILL STEM TEST REPORT

Prepared For: **Bach Oil Production**

P.O. Box 723
Alma, NE 68920

ATTN: Bob Peterson

Dorothy #1

9-2s-19w Phillips,KS

Start Date: 2014.10.02 @ 17:36:00

End Date: 2014.10.03 @ 04:12:00

Job Ticket #: 60705 DST #: 1

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

Printed: 2014.10.07 @ 11:21:30



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Bach Oil Production

9-2s-19w Phillips,KS

P.O. Box 723
Alma, NE 68920

Dorothy #1

Job Ticket: 60705

DST#: 1

ATTN: Bob Peterson

Test Start: 2014.10.02 @ 17:36:00

GENERAL INFORMATION:

Formation: **Toronto - LKC B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:38:00

Time Test Ended: 04:12:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Phillip Gage

Unit No: 76

Interval: 3394.00 ft (KB) To 3504.00 ft (KB) (TVD)

Reference Elevations: 2235.00 ft (KB)

Total Depth: 3504.00 ft (KB) (TVD)

2230.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8789

Inside

Press@RunDepth: 90.74 psig @ 3395.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.02

End Date:

2014.10.03

Last Calib.: 2014.10.03

Start Time: 17:36:02

End Time:

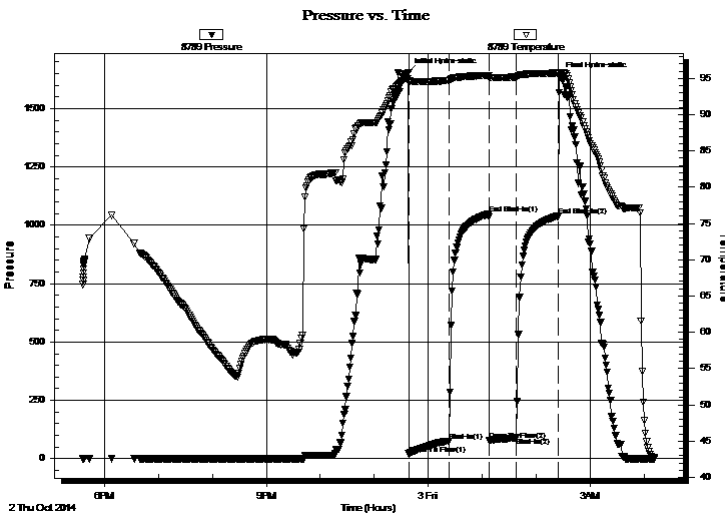
04:12:00

Time On Btm: 2014.10.02 @ 23:37:45

Time Off Btm: 2014.10.03 @ 02:25:45

TEST COMMENT: 45-IF-Built to 5 3/4"
45-ISI-No Return
30-FF-Built to 1"
45-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1655.26	94.98	Initial Hydro-static
1	20.66	94.39	Open To Flow (1)
46	75.92	94.71	Shut-In(1)
90	1049.65	95.41	End Shut-In(1)
91	78.30	95.04	Open To Flow (2)
121	90.74	95.20	Shut-In(2)
167	1038.95	95.72	End Shut-In(2)
168	1638.17	95.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
166.00	M, w ith oil spots, 100% m	1.30

Gas Rates

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



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DRILL STEM TEST REPORT

Bach Oil Production

9-2s-19w Phillips,KS

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Total Depth: 3504.00 ft (KB) (TVD)

2230.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8289 Outside

Press@RunDepth: psig @ 3395.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.02

End Date:

2014.10.03

Last Calib.:

2014.10.03

Start Time: 17:36:02

End Time:

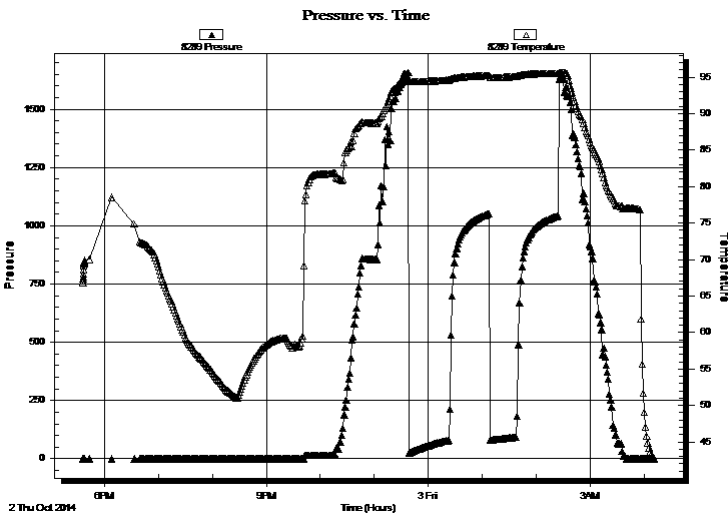
04:12:15

Time On Btm:

Time Off Btm:

TEST COMMENT: 45-IF-Built to 5 3/4"
45-ISI-No Return
30-FF-Built to 1"
45-FSI-No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
166.00	M, w ith oil spots, 100% m	1.30

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bach Oil Production

9-2s-19w Phillips,KS

P.O. Box 723
Alma, NE 68920

Dorothy #1

Job Ticket: 60705

DST#: 1

ATTN: Bob Peterson

Test Start: 2014.10.02 @ 17:36:00

Tool Information

Drill Pipe:	Length: 3272.00 ft	Diameter: 3.80 inches	Volume: 45.90 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: 113.00 ft	Diameter: 2.25 inches	Volume: 0.56 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 46.46 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	46000.00 lb
Depth to Top Packer:	3394.00 ft			Final	47000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	110.00 ft				
Tool Length:	138.00 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			3367.00	
Shut In Tool	5.00			3372.00	
Hydraulic tool	5.00			3377.00	
Jars	5.00			3382.00	
Safety Joint	2.00			3384.00	
Packer	5.00			3389.00	28.00 Bottom Of Top Packer
Packer	5.00			3394.00	
Stubb	1.00			3395.00	
Recorder	0.00	8789	Inside	3395.00	
Recorder	0.00	8289	Outside	3395.00	
Perforations	5.00			3400.00	
Change Over Sub	1.00			3401.00	
Drill Pipe	94.00			3495.00	
Change Over Sub	1.00			3496.00	
Perforations	5.00			3501.00	
Bullnose	3.00			3504.00	110.00 Bottom Packers & Anchor
Total Tool Length:	138.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bach Oil Production

9-2s-19w Phillips,KS

P.O. Box 723
Alma, NE 68920

Dorothy #1

Job Ticket: 60705

DST#: 1

ATTN: Bob Peterson

Test Start: 2014.10.02 @ 17:36:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 40.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 0.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
166.00	M, w ith oil spots, 100%m	1.299

Total Length: 166.00 ft Total Volume: 1.299 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

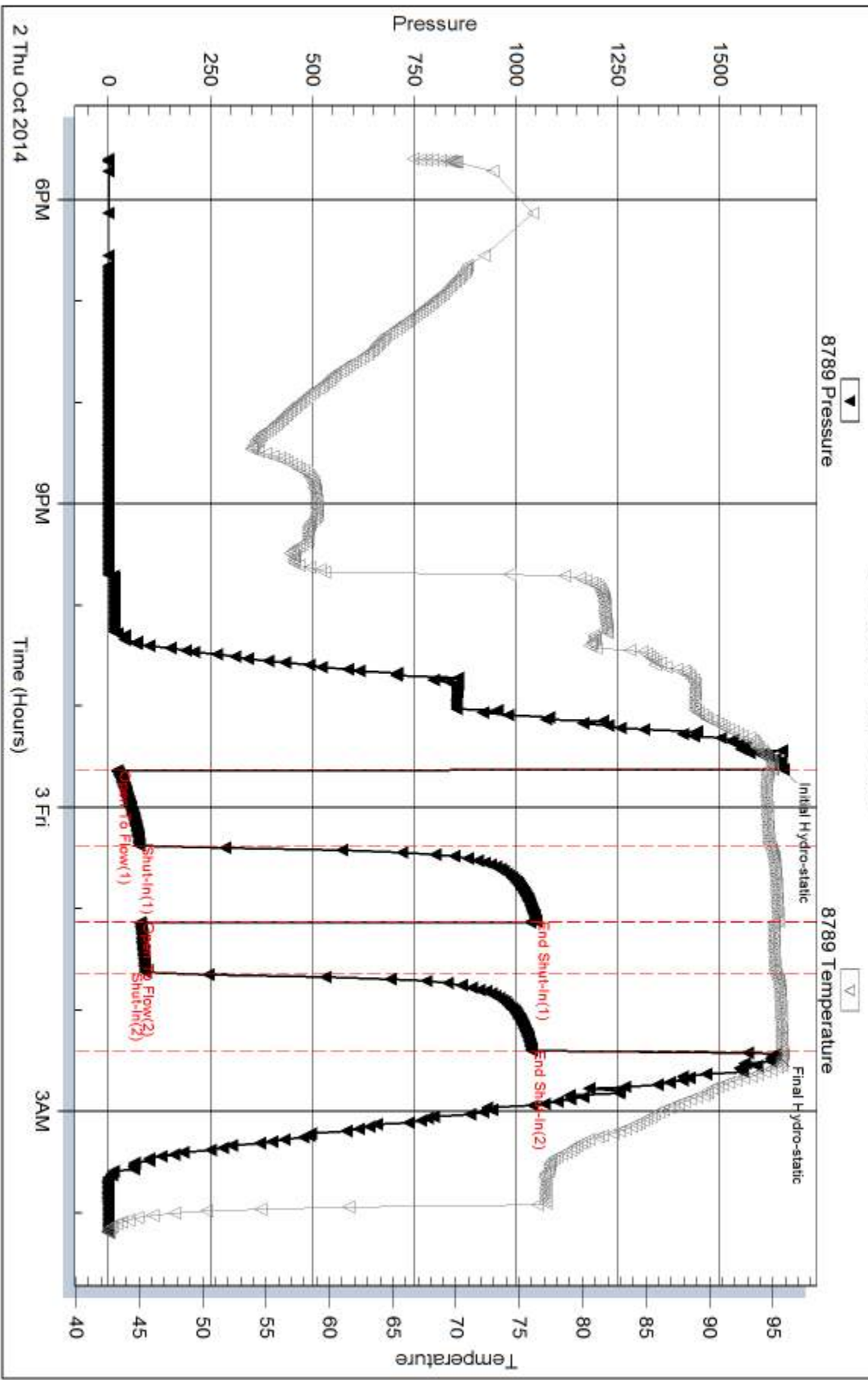
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

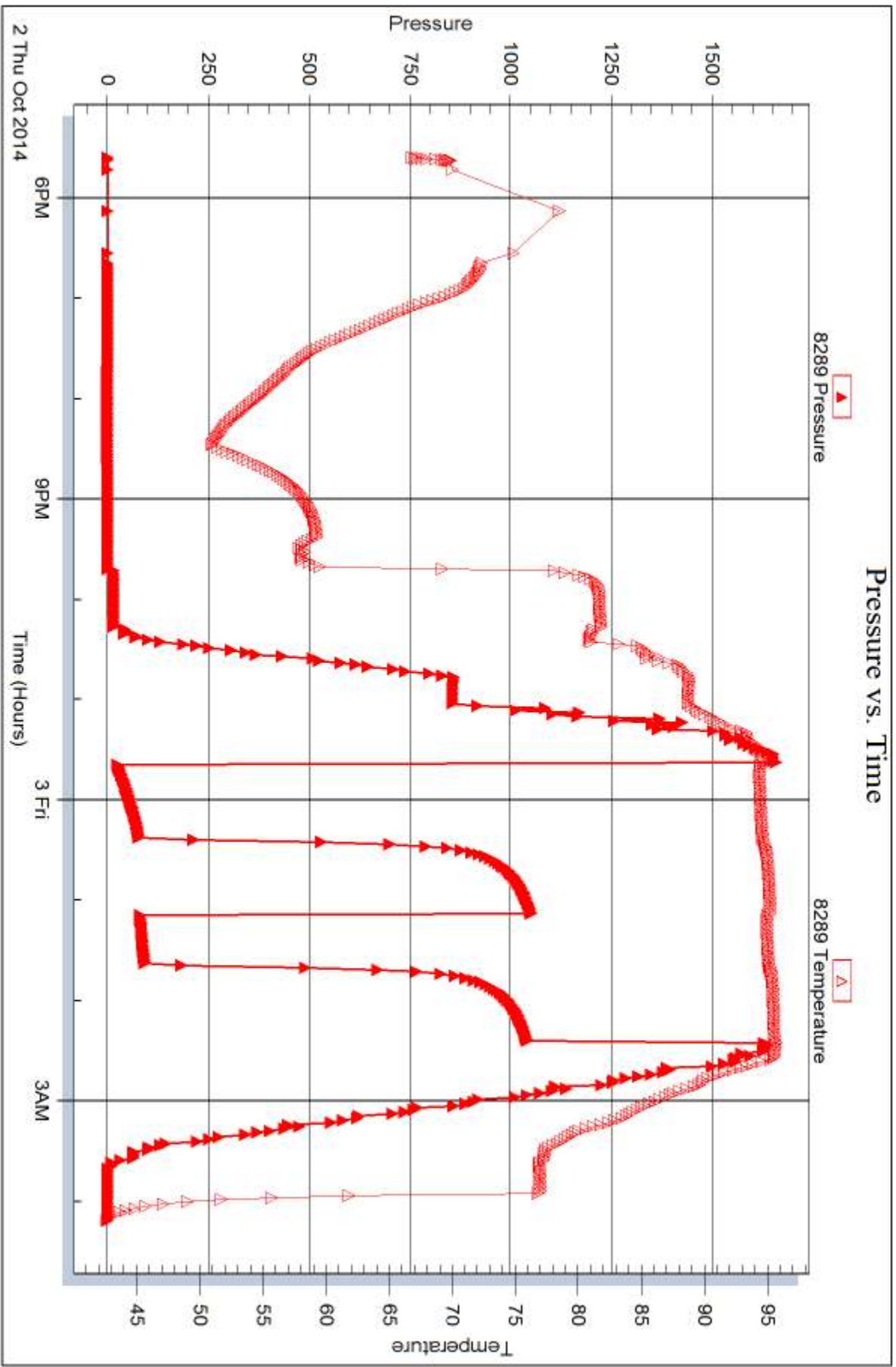


Serial #: 8289

Outside Bach Oil Production

Dorothy #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60705

Printed: 2014, 10, 07 @ 11:21:31



DRILL STEM TEST REPORT

Prepared For: **Bach Oil Production**

P.O. Box 723
Alma, NE 68920

ATTN: Bob Peterson

Dorothy #1

9-2s-19w Phillips,KS

Start Date: 2014.10.03 @ 19:15:00

End Date: 2014.10.04 @ 02:24:30

Job Ticket #: 60706 DST #: 2

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

Printed: 2014.10.07 @ 11:20:57



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Bach Oil Production

9-2s-19w Phillips,KS

P.O. Box 723
Alma, NE 68920

Dorothy #1

Job Ticket: 60706

DST#: 2

ATTN: Bob Peterson

Test Start: 2014.10.03 @ 19:15:00

GENERAL INFORMATION:

Formation: **LKC "I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:52:30

Time Test Ended: 02:24:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Phillip Gage

Unit No: 76

Interval: 3578.00 ft (KB) To 3620.00 ft (KB) (TVD)

Reference Elevations: 2235.00 ft (KB)

Total Depth: 3620.00 ft (KB) (TVD)

2230.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8789

Inside

Press@RunDepth: 22.36 psig @ 3579.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.03

End Date:

2014.10.04

Last Calib.: 2014.10.04

Start Time: 19:15:02

End Time:

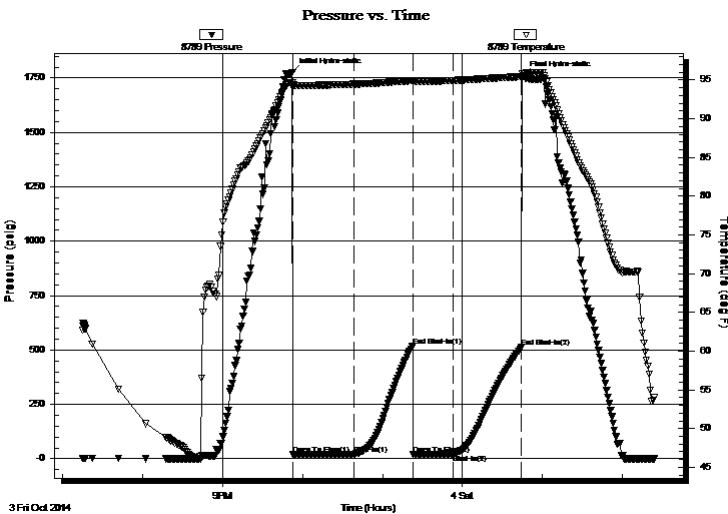
02:24:30

Time On Btm: 2014.10.03 @ 21:52:15

Time Off Btm: 2014.10.04 @ 00:45:30

TEST COMMENT: 45-IF-Built to 1/4"
45-ISI-No Return
30-FF-No Blow
45-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1776.05	94.71	Initial Hydro-static
1	18.71	94.11	Open To Flow (1)
47	20.10	94.46	Shut-In(1)
91	518.64	94.93	End Shut-In(1)
91	21.26	94.76	Open To Flow (2)
121	22.36	94.94	Shut-In(2)
172	511.38	95.44	End Shut-In(2)
174	1760.04	95.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M, w ith oil spots, 100% m	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

Bach Oil Production

9-2s-19w Phillips,KS

P.O. Box 723
Alma, NE 68920

Dorothy #1

Job Ticket: 60706

DST#: 2

ATTN: Bob Peterson

Test Start: 2014.10.03 @ 19:15:00

GENERAL INFORMATION:

Formation: **LKC "I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:52:30

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Tester: Phillip Gage

Unit No: 76

Interval: 3578.00 ft (KB) To 3620.00 ft (KB) (TVD)

Reference Elevations: 2235.00 ft (KB)

Total Depth: 3620.00 ft (KB) (TVD)

2230.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8289 Outside

Press@RunDepth: psig @ 3579.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.03

End Date:

2014.10.04

Last Calib.:

2014.10.04

Start Time: 19:15:02

End Time:

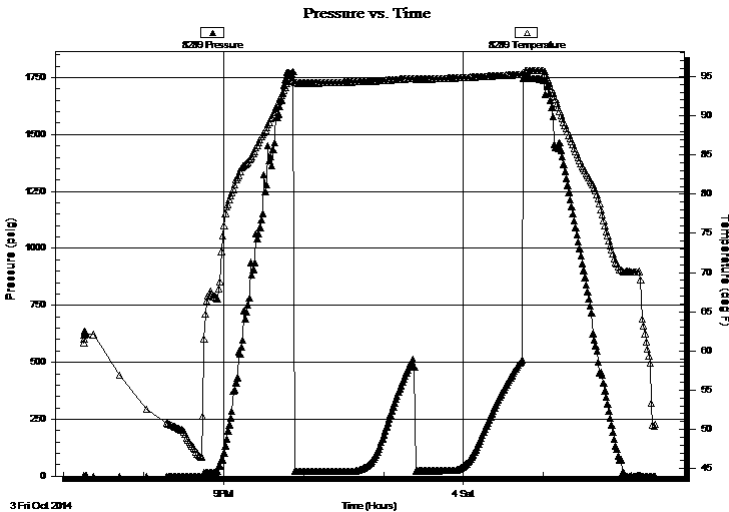
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Time On Btm:

Time Off Btm:

TEST COMMENT: 45-IF-Built to 1/4"
45-ISI-No Return
30-FF-No Blow
45-FSI-No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M, w ith oil spots, 100% m	0.02

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bach Oil Production

9-2s-19w Phillips,KS

P.O. Box 723
Alma, NE 68920

Dorothy #1

Job Ticket: 60706

DST#: 2

ATTN: Bob Peterson

Test Start: 2014.10.03 @ 19:15:00

Tool Information

Drill Pipe:	Length: 3459.00 ft	Diameter: 3.80 inches	Volume: 48.52 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: 113.00 ft	Diameter: 2.25 inches	Volume: 0.56 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 49.08 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3578.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	42.00 ft				
Tool Length:	70.00 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			3551.00	
Shut In Tool	5.00			3556.00	
Hydraulic tool	5.00			3561.00	
Jars	5.00			3566.00	
Safety Joint	2.00			3568.00	
Packer	5.00			3573.00	28.00 Bottom Of Top Packer
Packer	5.00			3578.00	
Stubb	1.00			3579.00	
Recorder	0.00	8789	Inside	3579.00	
Recorder	0.00	8289	Outside	3579.00	
Perforations	38.00			3617.00	
Bullnose	3.00			3620.00	42.00 Bottom Packers & Anchor

Total Tool Length: 70.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bach Oil Production

9-2s-19w Phillips,KS

P.O. Box 723
Alma, NE 68920

Dorothy #1

Job Ticket: 60706

DST#: 2

ATTN: Bob Peterson

Test Start: 2014.10.03 @ 19:15:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbf

Water Loss: 4.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 0.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	M, with oil spots, 100% m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8789

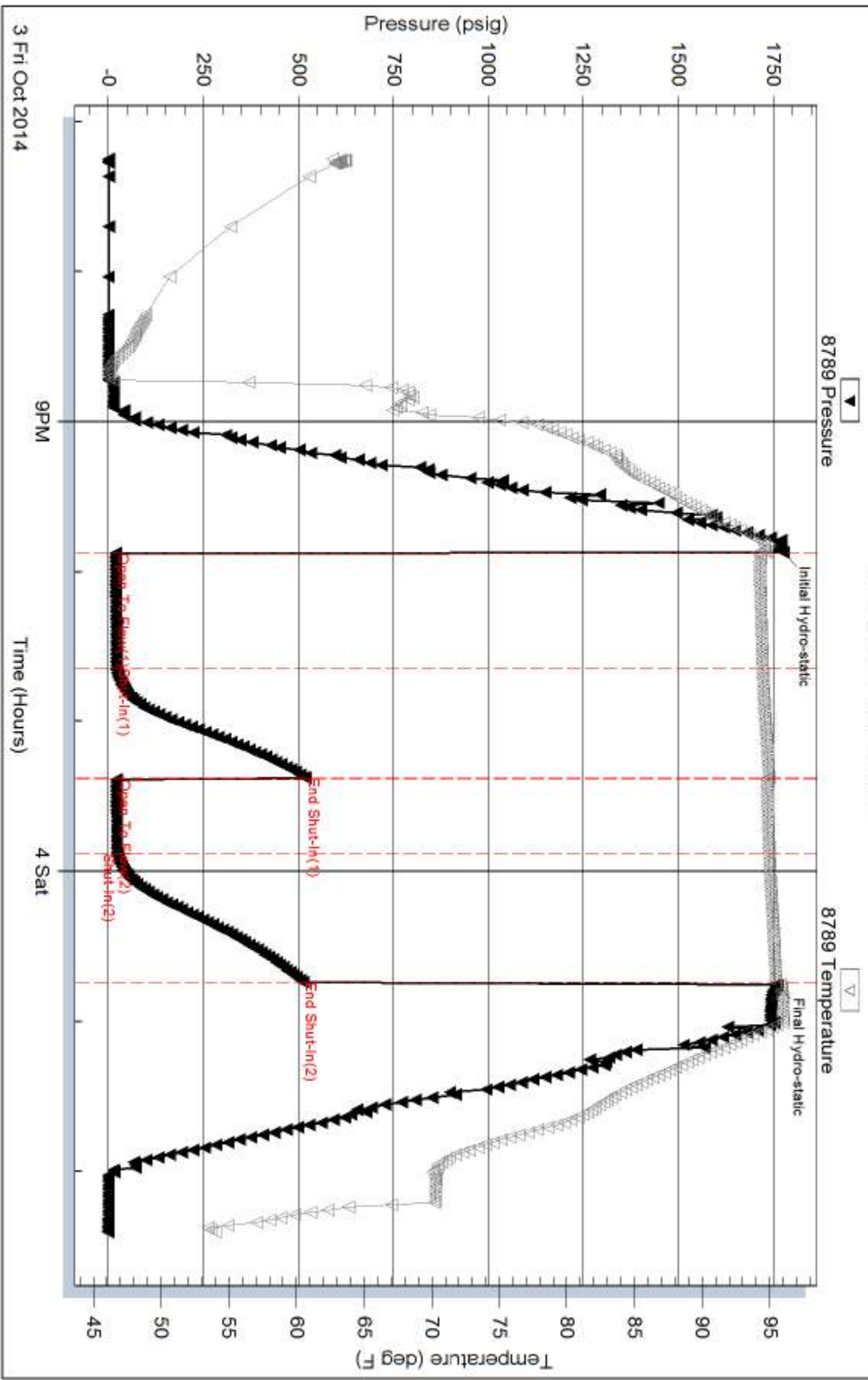
Inside

Bach Oil Production

Dorothy #1

DST Test Number: 2

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 60706

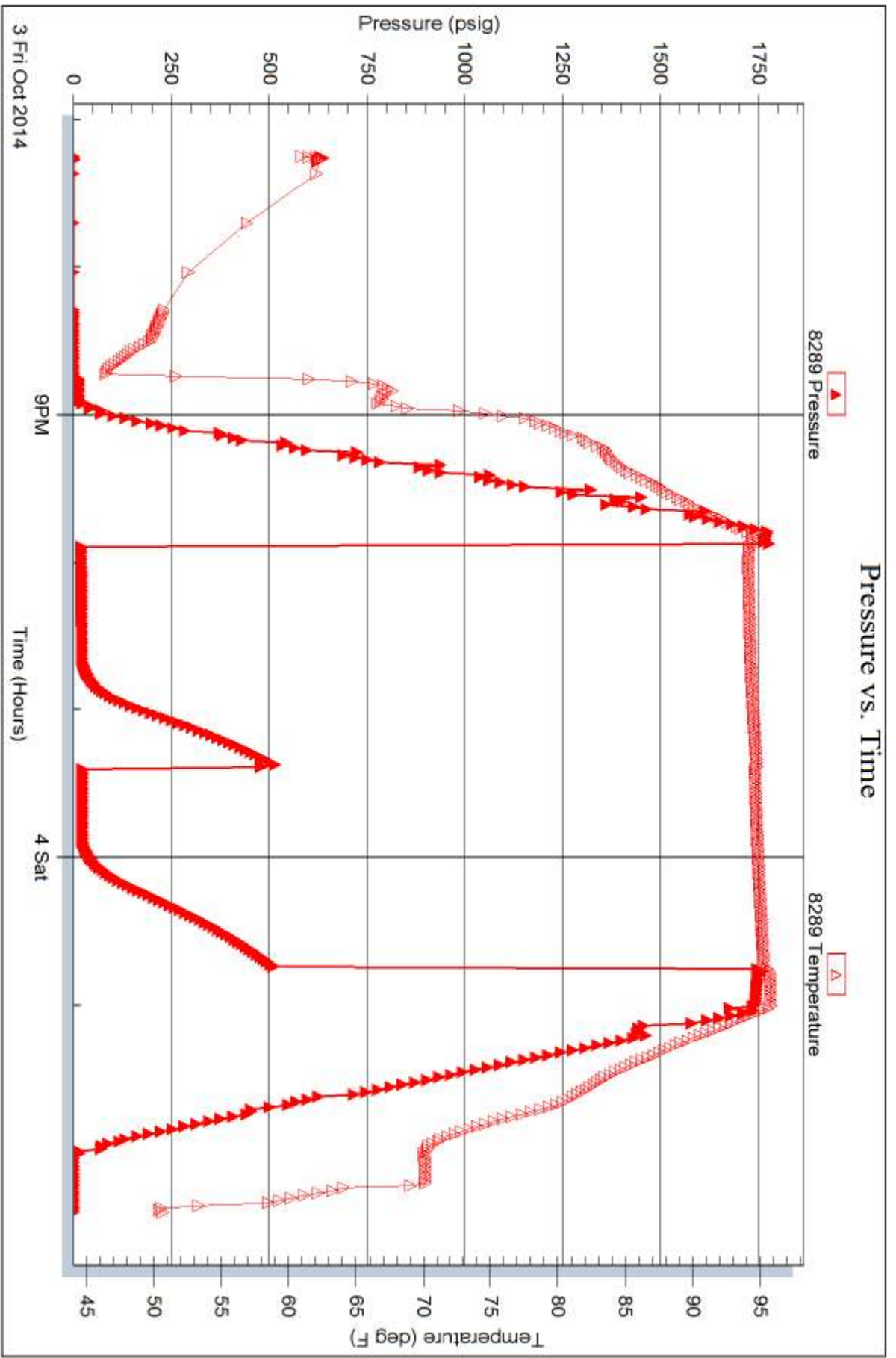
Printed: 2014, 10, 07 @ 11:20:59

Serial #: 8289

Outside Bach Oil Production

Dorothy #1

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **60705** 21653

4/10

Well Name & No. Dorothy #1 Test No. 1 Date 10-2-14
 Company Bach, Jason dba Bach Oil Production Elevation 2235 KB 2230 GL
 Address P.O. Box 773 Alma, NE 68920
 Co. Rep / Geo. Bob Peterson Rig Martin 24
 Location: Sec. 09 Twp. 02S Rge. 19w Co. Phillips State KS

Interval Tested 3394-3504 Zone Tested Toronto - B
 Anchor Length 110' Drill Pipe Run 3272 Mud Wt. 9.1
 Top Packer Depth 3389 Drill Collars Run 113 Vis 40
 Bottom Packer Depth 3394 Wt. Pipe Run 0 WL 6.4
 Total Depth 3504 Chlorides 800 ppm System LCM 1/2#
 Blow Description IF Buds to 5 3/4"
ISI No Return
FF Buds to 1"
FSI No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>166'</u>	<u>M, with oil spots</u>				<u>100%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 166' BHT 45 Gravity — API RW — ° F Chlorides — ppm
 (A) Initial Hydrostatic 1,655 Test 1150 T-On Location 17:35
 (B) First Initial Flow 20 Jars 250 T-Started 17:36
 (C) First Final Flow 75 Safety Joint 75 T-Open 23:38
 (D) Initial Shut-In 1,049 Circ Sub — T-Pulled 02:23
 (E) Second Initial Flow 78 Hourly Standby 1.75h 175 T-Out 04:12
 (F) Second Final Flow 90 Mileage 166 RT 125 rt 193.75
 (G) Final Shut-In 1,038 Sampler —
 (H) Final Hydrostatic 1,638 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Extra Recorder — Sub Total 0
 Day Standby — Total 1843.75
 Accessibility — MP/DST Disc't —
 Sub Total 1843.75

Approved By _____ Our Representative Phil Long 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. **60706**

4/10

Well Name & No. Dorothy #1 Test No. 2 Date 10-3-14
 Company Bach, Jason aka Bach Oil Production Elevation 2235 KB 2230 GL
 Address P.O. Box 723 Alma, NE 68920
 Co. Rep / Geo. Bob Peterson Rig Murkin 24
 Location: Sec. 09 Twp. 02s Rge. 19w Co. Phillips State KS

Interval Tested 3578-3620 Zone Tested LK 11"
 Anchor Length 42' Drill Pipe Run 3459 Mud Wt. 9.2
 Top Packer Depth 3573 Drill Collars Run 113 Vis 49
 Bottom Packer Depth 3578 Wt. Pipe Run 0 WL 4.8
 Total Depth 3620 Chlorides 800 ppm System LCM 1/2H

Blow Description IF Bunt to 1/4"
ISE No Return
FF No Blow
BSI No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>M₁ with oil spots</u>				<u>100</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 95 Gravity — API RW @ °F Chlorides — ppm

(A) Initial Hydrostatic 1,776 Test 1150 T-On Location 19:13
 (B) First Initial Flow 18 Jars 250 T-Started 19:15
 (C) First Final Flow 20 Safety Joint 75 T-Open 21:53
 (D) Initial Shut-In 518 Circ Sub _____ T-Pulled 00:38
 (E) Second Initial Flow 21 Hourly Standby _____ T-Out 02:25
 (F) Second Final Flow 22 Mileage 166 RT 193.75 Comments _____
 (G) Final Shut-In 511 Sampler _____
 (H) Final Hydrostatic 1,760 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 45
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1668.75
 Total 1668.75
 MP/DST Disc't _____

Approved By _____ Our Representative Phil Hoag 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.