



DRILL STEM TEST REPORT

Prepared For: **Bach Oil Production**

P.O. Box 723
Alma, NE 68920

ATTN: Bob Peterson

Billy #3

3-2S-19W Phillips, KS

Start Date: 2013.12.31 @ 04:42:00

End Date: 2013.12.31 @ 11:01:30

Job Ticket #: 53565 DST #: 1

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

Printed: 2014.01.08 @ 13:17:07



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Bach Oil Production

3-2S-19W Phillips, KS

P.O. Box 723
Alma, NE 68920

Billy #3

Job Ticket: 53565

DST#: 1

ATTN: Bob Peterson

Test Start: 2013.12.31 @ 04:42:00

GENERAL INFORMATION:

Formation: **LKC "C-F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:27:10

Time Test Ended: 11:01:30

Test Type: Conventional Straddle (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 3458.00 ft (KB) To 3538.00 ft (KB) (TVD)

Reference Elevations: 2269.00 ft (KB)

Total Depth: 3653.00 ft (KB) (TVD)

2264.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8874

Inside

Press@RunDepth: 42.70 psig @ 3459.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.31

End Date:

2013.12.31

Last Calib.: 2013.12.31

Start Time: 04:43:00

End Time:

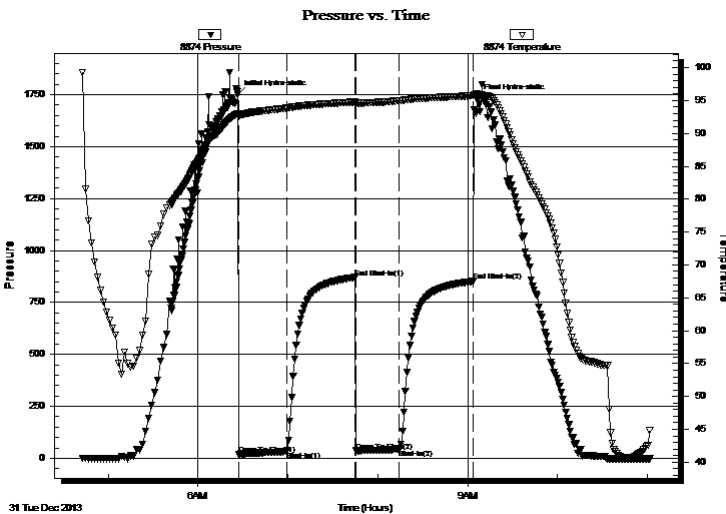
11:01:30

Time On Btm: 2013.12.31 @ 06:26:50

Time Off Btm: 2013.12.31 @ 09:06:00

TEST COMMENT: 30 - IF- 3/4" Blow built to 2 3/4"
45 - IS- No Return
30 - FF- Surface Blow started at 10 min. Built to 1"
45 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1750.08	93.05	Initial Hydro-static
1	19.81	92.56	Open To Flow (1)
33	32.14	93.83	Shut-In(1)
78	869.79	94.77	End Shut-In(1)
79	35.73	94.58	Open To Flow (2)
108	42.70	94.98	Shut-In(2)
157	851.70	95.70	End Shut-In(2)
160	1730.76	95.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	Mud 100M	0.30
0.00	Show of oil spots in tool	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bach Oil Production

3-2S-19W Phillips, KS

P.O. Box 723
Alma, NE 68920

Billy #3

Job Ticket: 53565

DST#: 1

ATTN: Bob Peterson

Test Start: 2013.12.31 @ 04:42:00

Tool Information

Drill Pipe:	Length: 3316.00 ft	Diameter: 3.80 inches	Volume: 46.51 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 47.10 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3458.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	3654.00 ft			
Interval between Packers:	196.00 ft			
Tool Length:	224.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3431.00	
Shut In Tool	5.00			3436.00	
Hydraulic tool	5.00			3441.00	
Jars	5.00			3446.00	
Safety Joint	3.00			3449.00	
Packer	5.00			3454.00	28.00 Bottom Of Top Packer
Packer	4.00			3458.00	
Stubb	1.00			3459.00	
Recorder	0.00	8653	Outside	3459.00	
Recorder	0.00	8874	Inside	3459.00	
Perforations	5.00			3464.00	
Change Over Sub	1.00			3465.00	
Drill Pipe	63.00			3528.00	
Change Over Sub	1.00			3529.00	
Perforations	5.00			3534.00	
Blank Off Sub	1.00			3535.00	
Packer - Shale	4.00			3539.00	
Stubb	1.00			3540.00	
Perforations	13.00			3553.00	
Change Over Sub	1.00			3554.00	
Recorder	0.00	8520	Below	3554.00	
Drill Pipe	94.00			3648.00	
Change Over Sub	1.00			3649.00	
Bullnose	5.00			3654.00	196.00 Bottom Packers & Anchor
Total Tool Length:	224.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bach Oil Production

3-2S-19W Phillips, KS

P.O. Box 723
Alma, NE 68920

Billy #3

Job Ticket: 53565

DST#: 1

ATTN: Bob Peterson

Test Start: 2013.12.31 @ 04:42:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	Mud 100M	0.295
0.00	Show of oil spots in tool	0.000

Total Length: 60.00 ft Total Volume: 0.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8874

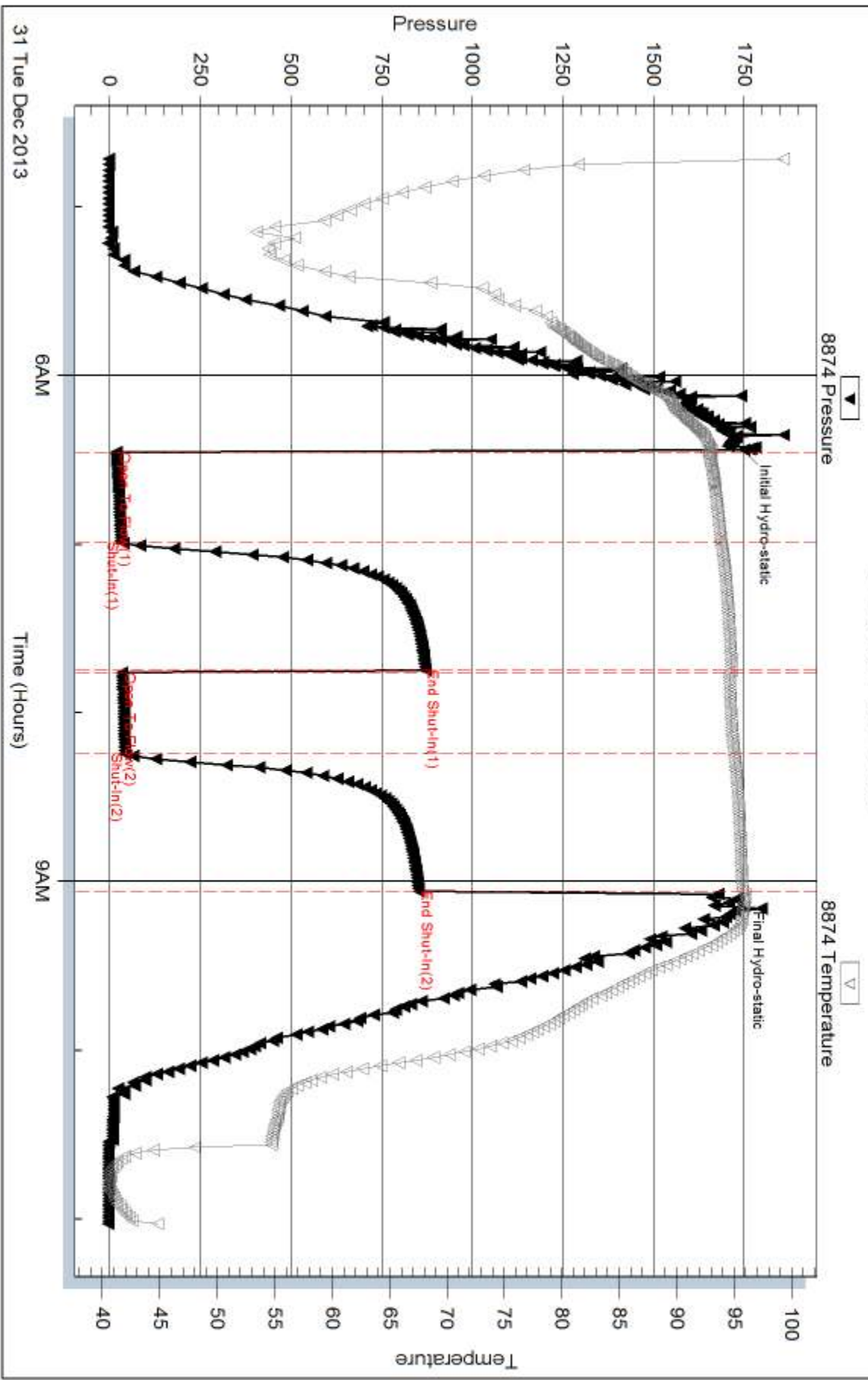
Inside

Back Oil Production

Billy #3

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 53565

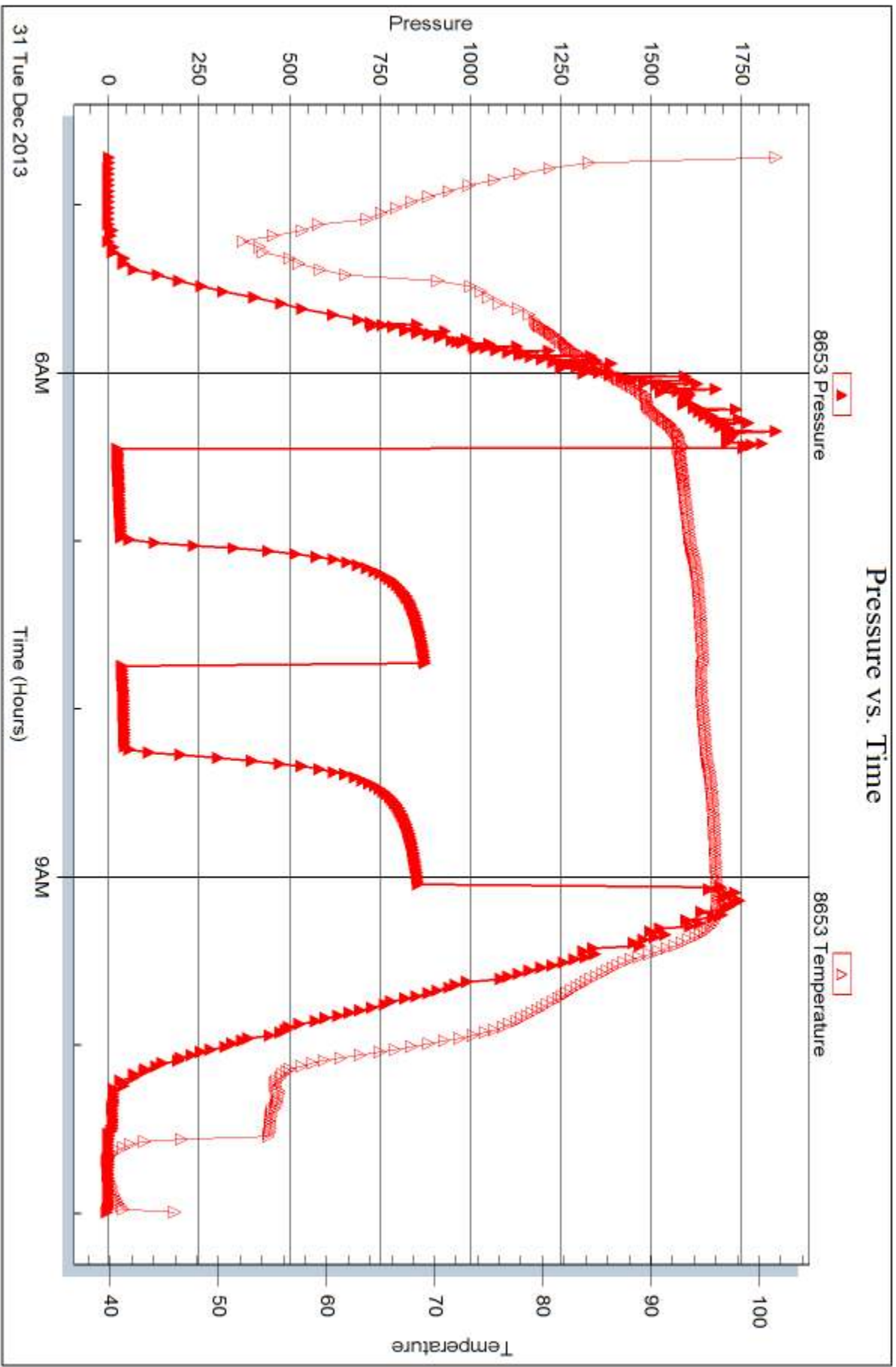
Printed: 2014.01.08 @ 13:17:09

Serial #: 8653

Outside Bach Oil Production

Billy #3

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 53565

Printed: 2014.01.08 @ 13:17:09



DRILL STEM TEST REPORT

Prepared For: **Bach Oil Production**

P.O. Box 723
Alma, NE 68920

ATTN: Bob Peterson

Billy #3

3-2S-19W Phillips, KS

Start Date: 2013.12.31 @ 11:24:00

End Date: 2013.12.31 @ 18:49:30

Job Ticket #: 53566 DST #: 2

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

Printed: 2014.01.08 @ 13:16:42



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Bach Oil Production

3-2S-19W Phillips, KS

P.O. Box 723
Alma, NE 68920

Billy #3

Job Ticket: 53566

DST#: 2

ATTN: Bob Peterson

Test Start: 2013.12.31 @ 11:24:00

GENERAL INFORMATION:

Formation: **LKC "I,J,K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:03:10

Time Test Ended: 18:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 3583.00 ft (KB) To 3663.00 ft (KB) (TVD)

Reference Elevations: 2269.00 ft (KB)

Total Depth: 3663.00 ft (KB) (TVD)

2264.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8874

Inside

Press@RunDepth: 71.19 psig @ 3584.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.31

End Date:

2013.12.31

Last Calib.: 2013.12.31

Start Time: 11:25:00

End Time:

18:49:30

Time On Btm: 2013.12.31 @ 13:02:50

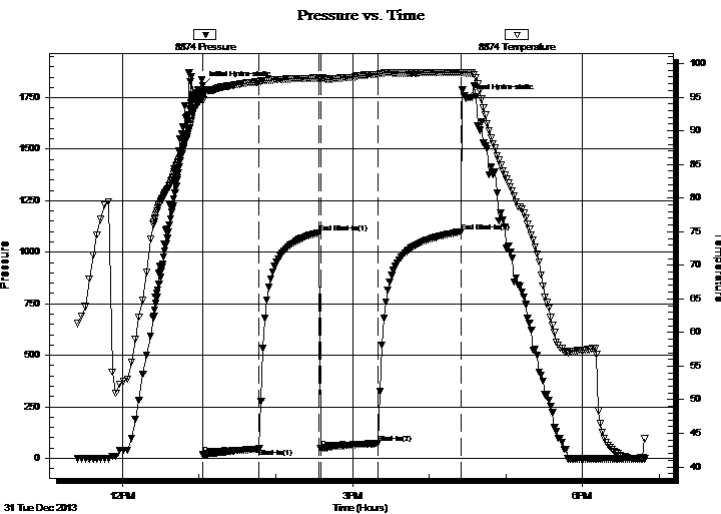
Time Off Btm: 2013.12.31 @ 16:29:00

TEST COMMENT: 45 - IF- 1/2" Blow built to 4"

45 - IS- No Return

45 - FF- Surface Blow built to 3"

60 - FS- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1810.23	94.93	Initial Hydro-static
1	18.12	94.58	Open To Flow (1)
45	45.66	97.30	Shut-In(1)
91	1095.05	97.87	End Shut-In(1)
93	48.92	97.68	Open To Flow (2)
138	71.19	98.42	Shut-In(2)
202	1098.73	98.69	End Shut-In(2)
207	1747.35	98.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	OSWM 98M 2W (oil spots)	0.66

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bach Oil Production

3-2S-19W Phillips, KS

P.O. Box 723
Alma, NE 68920

Billy #3

Job Ticket: 53566

DST#: 2

ATTN: Bob Peterson

Test Start: 2013.12.31 @ 11:24:00

Tool Information

Drill Pipe:	Length: 3445.00 ft	Diameter: 3.80 inches	Volume: 48.32 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 48.91 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3583.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	80.00 ft				
Tool Length:	108.00 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			3556.00	
Shut In Tool	5.00			3561.00	
Hydraulic tool	5.00			3566.00	
Jars	5.00			3571.00	
Safety Joint	3.00			3574.00	
Packer	5.00			3579.00	28.00 Bottom Of Top Packer
Packer	4.00			3583.00	
Stubb	1.00			3584.00	
Recorder	0.00	8653	Outside	3584.00	
Recorder	0.00	8874	Inside	3584.00	
Perforations	9.00			3593.00	
Change Over Sub	1.00			3594.00	
Drill Pipe	63.00			3657.00	
Change Over Sub	1.00			3658.00	
Bullnose	5.00			3663.00	80.00 Bottom Packers & Anchor

Total Tool Length: 108.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Bach Oil Production

3-2S-19W Phillips, KS

P.O. Box 723
Alma, NE 68920

Billy #3

Job Ticket: 53566

DST#: 2

ATTN: Bob Peterson

Test Start: 2013.12.31 @ 11:24:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	OSWM 98M 2W (oil spots)	0.660

Total Length: 125.00 ft Total Volume: 0.660 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

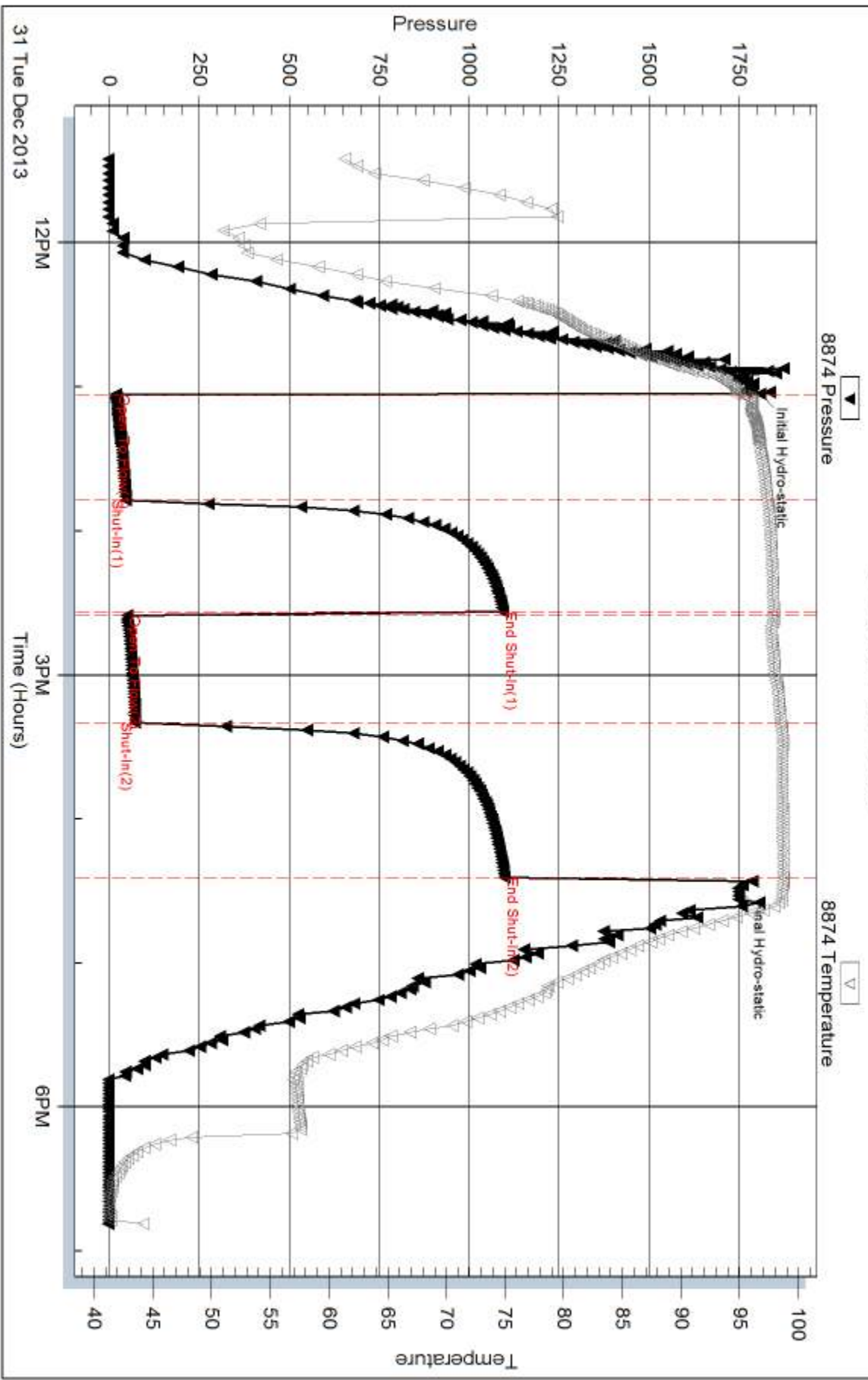
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



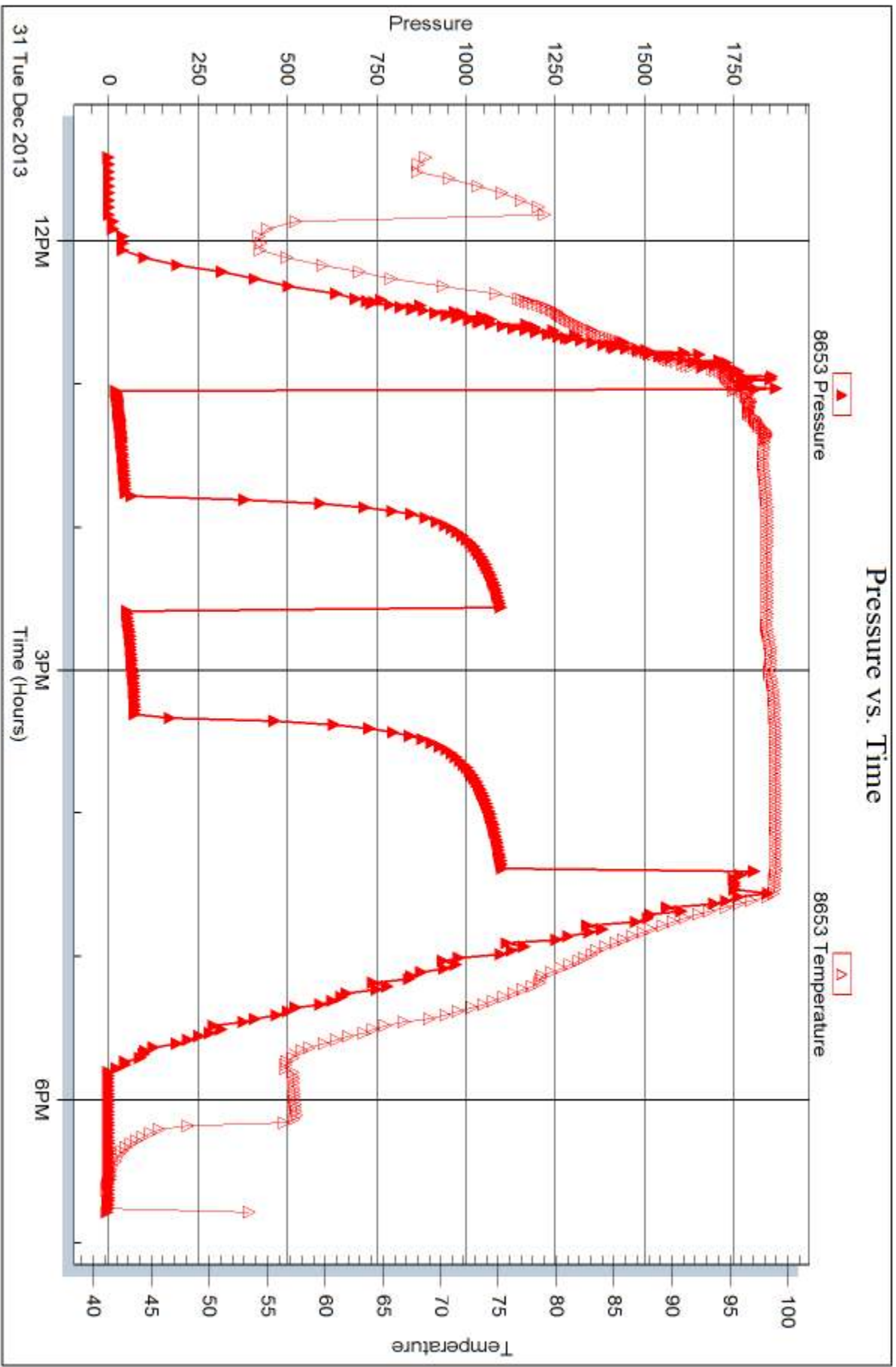
31 Tue Dec 2013

Serial #: 8653

Outside Bach Oil Production

Billy #3

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 53566

Printed: 2014.01.08 @ 13:16:45



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53565

Well Name & No. Billy #3 Test No. 1 Date 12-31-13
 Company Bach Oil Production Elevation 2269 KB 2264 GL
 Address P.O. Box 723 Alma, NE 68920
 Co. Rep / Geo. Bob 1 Rig Murkin #24
 Location: Sec. 3 Twp. 2S Rge. 19W Co. Phillips State KS

Interval Tested 3458 - 3538 Zone Tested LKC "C-F"
 Anchor Length 80 Drill Pipe Run 3316' Mud Wt. 9.0
 Top Packer Depth 3454 Drill Collars Run 120 Vis 62
 Bottom Packer Depth 3458 - 3538 straddle packer Wt. Pipe Run 0 WL 5.6
 Total Depth 3653 Chlorides 400 ppm System LCM 1.5#

Blow Description IF - 3/4" Blow built to 2 3/4"
IST - NO Return
FF - Surface Blow started at 10min. Built to 1"
FSI - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>Mud</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	Feet of	%gas	%oil	%water	%mud

Rec Total 60 BHT 96 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>1750</u>	<input checked="" type="checkbox"/> Test 1150	T-On Location <u>3:45 AM</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>4:42 AM</u>
(C) First Final Flow <u>32</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>6:30 AM</u>
(D) Initial Shut-In <u>869</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>9:00 AM</u>
(E) Second Initial Flow <u>35</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:00 AM</u>
(F) Second Final Flow <u>42</u>	<input checked="" type="checkbox"/> Mileage 122mi 189.10	Comments <u>Show of oil spots in tool</u>
(G) Final Shut-In <u>851</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1730</u>	<input checked="" type="checkbox"/> Straddle 600	<input type="checkbox"/> Ruined Shale Packer

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45

Sub Total 0
 Total 2264.10
 MP/DST Disc't _____
 Sub Total 2264.10

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. 53566

Well Name & No. Billy #3 Test No. 2 Date 12-31-13
 Company Bach Oil Production Elevation 2269 KB 2264 GL
 Address P.O. Box 723 Alma, NE 68920
 Co. Rep / Geo. Bob Peterson Rig Murfin #24
 Location: Sec. 3 Twp. 2S Rge. 19W Co. Phillips State KS

Interval Tested 3583 - 3663 Zone Tested LKC "I, J"
 Anchor Length 80' Drill Pipe Run 3445' Mud Wt. 9.0
 Top Packer Depth 3579 Drill Collars Run 138 Vis 62
 Bottom Packer Depth 3583 Wt. Pipe Run Ø WL 5.6
 Total Depth 3663 Chlorides 4100 ppm System LCM 1.5#

Blow Description IF - 1/2" Blow built to 4"
ISI - No Return
FF - Surface Blow built to 3"
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>OSUM</u>	<u>SPOTS</u>	<u>2</u>	<u>98</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 125 BHT 99' Gravity — API RW — @ — °F Chlorides — ppm

- (A) Initial Hydrostatic 1810
- (B) First Initial Flow 18
- (C) First Final Flow 45
- (D) Initial Shut-In 1095
- (E) Second Initial Flow 48
- (F) Second Final Flow 71
- (G) Final Shut-In 1098
- (H) Final Hydrostatic 1747

- Test 1150
- Jars 250
- Safety Joint 75
- Circ Sub N/C
- Hourly Standby
- Mileage N/C
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility

- T-On Location 3:45 AM
- T-Started 11:24 AM
- T-Open 1:05 PM
- T-Pulled 4:20 PM
- T-Out 6:50 PM

Comments _____

Ruined Shale Packer _____

Ruined Packer _____

Extra Copies _____

Sub Total 0

Total 1475

MP/DST Disc't _____

Initial Open 45

Initial Shut-In 45

Final Flow 45

Final Shut-In 60

Sub Total 1475

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.