



## DRILL STEM TEST REPORT

Prepared For: **Herman L Loeb LLC**

PO Box 838  
Lawrenceville, IL 62439

ATTN: Jon Christensen

### **Musselman #4-34**

### **34-21s-16w Pawnee,KS**

Start Date: 2012.10.24 @ 09:20:05

End Date: 2012.10.24 @ 16:26:20

Job Ticket #: 49693                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.10.26 @ 09:52:12

Herman L Loeb LLC

34-21s-16w Pawnee,KS

Musselman #4-34

DST # 1

Lansing "A & B"

2012.10.24



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Herman L Loeb LLC  
 PO Box 838  
 Lawrenceville, IL 62439  
 ATTN: Jon Christensen

**34-21s-16w Pawnee, KS**  
**Musselman #4-34**  
 Job Ticket: 49693      **DST#: 1**  
 Test Start: 2012.10.24 @ 09:20:05

## GENERAL INFORMATION:

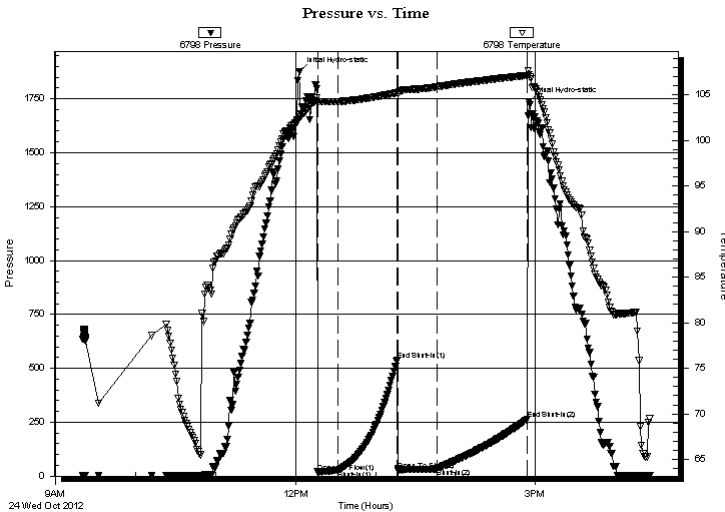
Formation: **Lansing "A & B"**  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 12:16:20  
 Time Test Ended: 16:26:20  
 Interval: **3515.00 ft (KB) To 3551.00 ft (KB) (TVD)**  
 Total Depth: 3551.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Leal Cason  
 Unit No: 45  
 Reference Elevations: 1997.00 ft (KB)  
 1986.00 ft (CF)  
 KB to GR/CF: 11.00 ft

## Serial #: 6798      Inside

Press @ Run Depth: 35.89 psig @ 3516.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2012.10.24      End Date: 2012.10.24      Last Calib.: 2012.10.24  
 Start Time: 09:20:06      End Time: 16:26:20      Time On Btm: 2012.10.24 @ 12:02:50  
 Time Off Btm: 2012.10.24 @ 14:55:20

TEST COMMENT: IF: Weak 1/2" Blow  
 IS: No Blow Back  
 FF: Weak Blow, Built to 4"  
 FS: No Blow Back

## PRESSURE SUMMARY



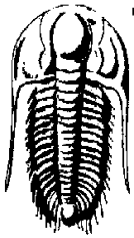
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1877.51	102.37	Initial Hydro-static
14	19.78	104.24	Open To Flow (1)
29	26.92	104.27	Shut-In(1)
74	539.65	105.23	End Shut-In(1)
75	27.63	105.16	Open To Flow (2)
104	35.89	105.89	Shut-In(2)
171	264.40	107.13	End Shut-In(2)
173	1738.07	107.24	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	40 GIP	0.00
20.00	SGCM 2&G 98%M	0.10

## Gas Rates

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



**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Herman L Loeb LLC  
PO Box 838  
Lawrenceville, IL 62439  
ATTN: Jon Christensen

**34-21s-16w Pawnee, KS**

**Musselman #4-34**

Job Ticket: 49693

**DST#: 1**

Test Start: 2012.10.24 @ 09:20:05

### GENERAL INFORMATION:

Formation: **Lansing "A & B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:16:20

Time Test Ended: 16:26:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Leal Cason

Unit No: 45

**Interval: 3515.00 ft (KB) To 3551.00 ft (KB) (TVD)**

Total Depth: 3551.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 1997.00 ft (KB)

1986.00 ft (CF)

KB to GR/CF: 11.00 ft

**Serial #: 8367** Outside

Press @ Run Depth: psig @ 3516.00 ft (KB)

Start Date: 2012.10.24

End Date: 2012.10.24

Capacity: 8000.00 psig

Last Calib.: 2012.10.24

Start Time: 09:20:06

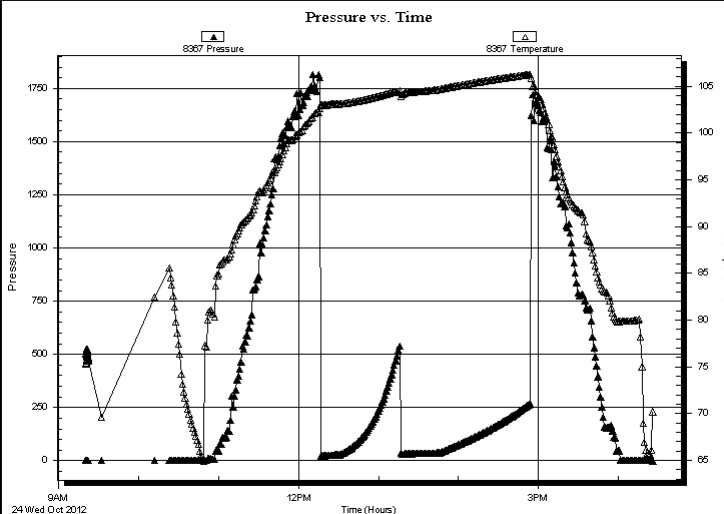
End Time: 16:26:05

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Weak 1/2" Blow  
IS: No Blow Back  
FF: Weak Blow , Built to 4"  
FS: No Blow Back

### PRESSURE SUMMARY



Time (Min.)

Pressure (psig)

Temp (deg F)

Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
0.00	40 GIP	0.00
20.00	SGCM 2&G 98%M	0.10

### Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Herman L Loeb LLC  
 PO Box 838  
 Lawrenceville, IL 62439  
 ATTN: Jon Christensen

**34-21s-16w Pawnee,KS**  
**Musselman #4-34**  
 Job Ticket: 49693      **DST#: 1**  
 Test Start: 2012.10.24 @ 09:20:05

**Tool Information**

Drill Pipe:	Length: 3283.00 ft	Diameter: 3.80 inches	Volume: 46.05 bbl	Tool Weight: 2100.00 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: 215.00 ft	Diameter: 2.25 inches	Volume: 1.06 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 47.11 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3515.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 ft			
Tool Length:	58.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3498.00	
Hydraulic tool	5.00			3503.00	
Safety Joint	2.00			3505.00	
Packer	5.00			3510.00	22.00      Bottom Of Top Packer
Packer	5.00			3515.00	
Stubb	1.00			3516.00	
Recorder	0.00	6798	Inside	3516.00	
Recorder	0.00	8367	Outside	3516.00	
Perforations	32.00			3548.00	
Bullnose	3.00			3551.00	36.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>58.00</b>				



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Herman L Loeb LLC  
 PO Box 838  
 Lawrenceville, IL 62439  
 ATTN: Jon Christensen

**34-21s-16w Pawnee,KS**  
**Musselman #4-34**  
 Job Ticket: 49693      **DST#: 1**  
 Test Start: 2012.10.24 @ 09:20:05

## 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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.38 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8500.00 ppm			
Filter Cake: 0.02 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	40 GIP	0.000
20.00	SGCM 2&G 98%M	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

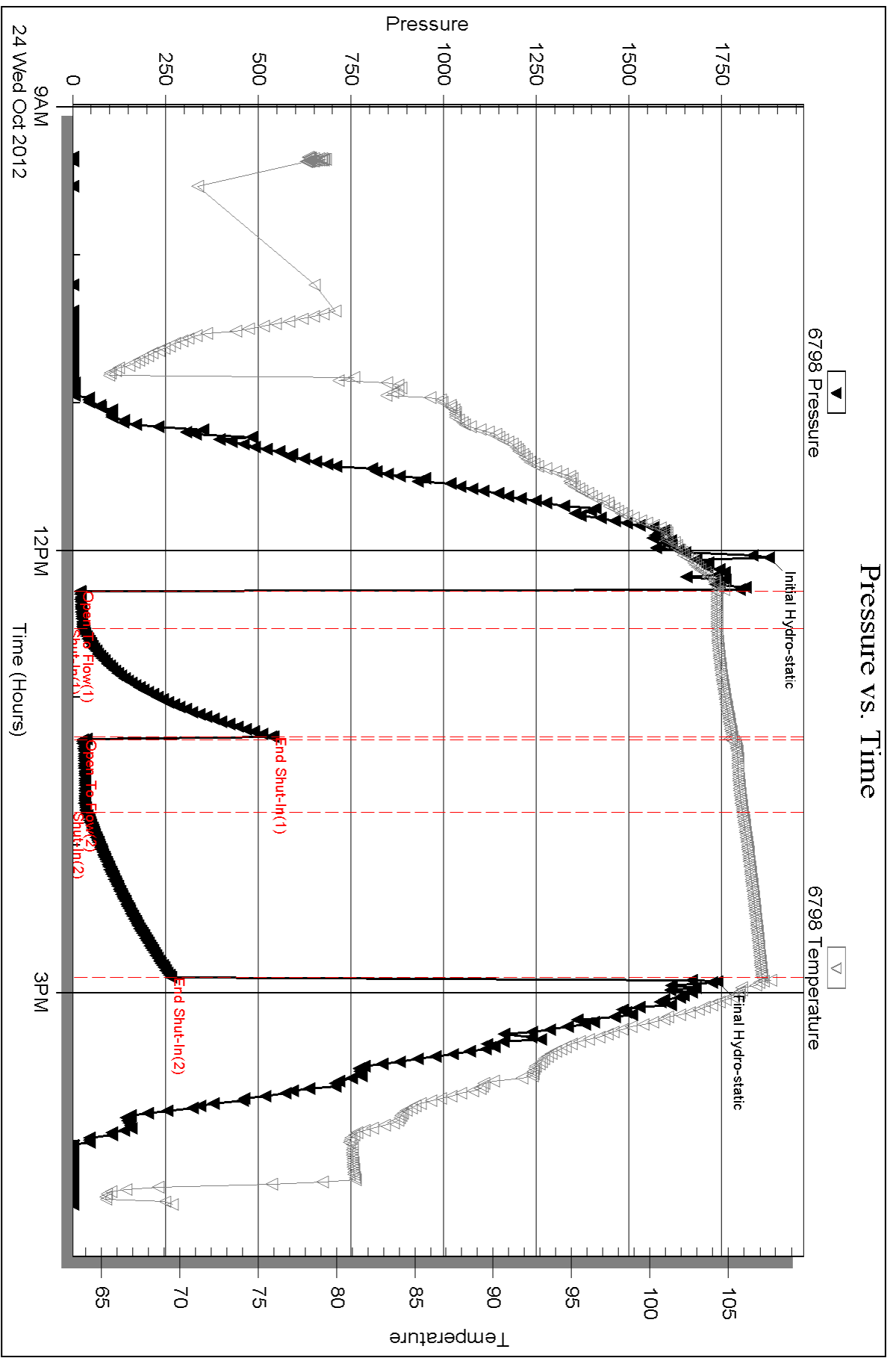
Serial #: 6798

Inside

Herrman L Loeb LLC

Musselman #4-34

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 49693

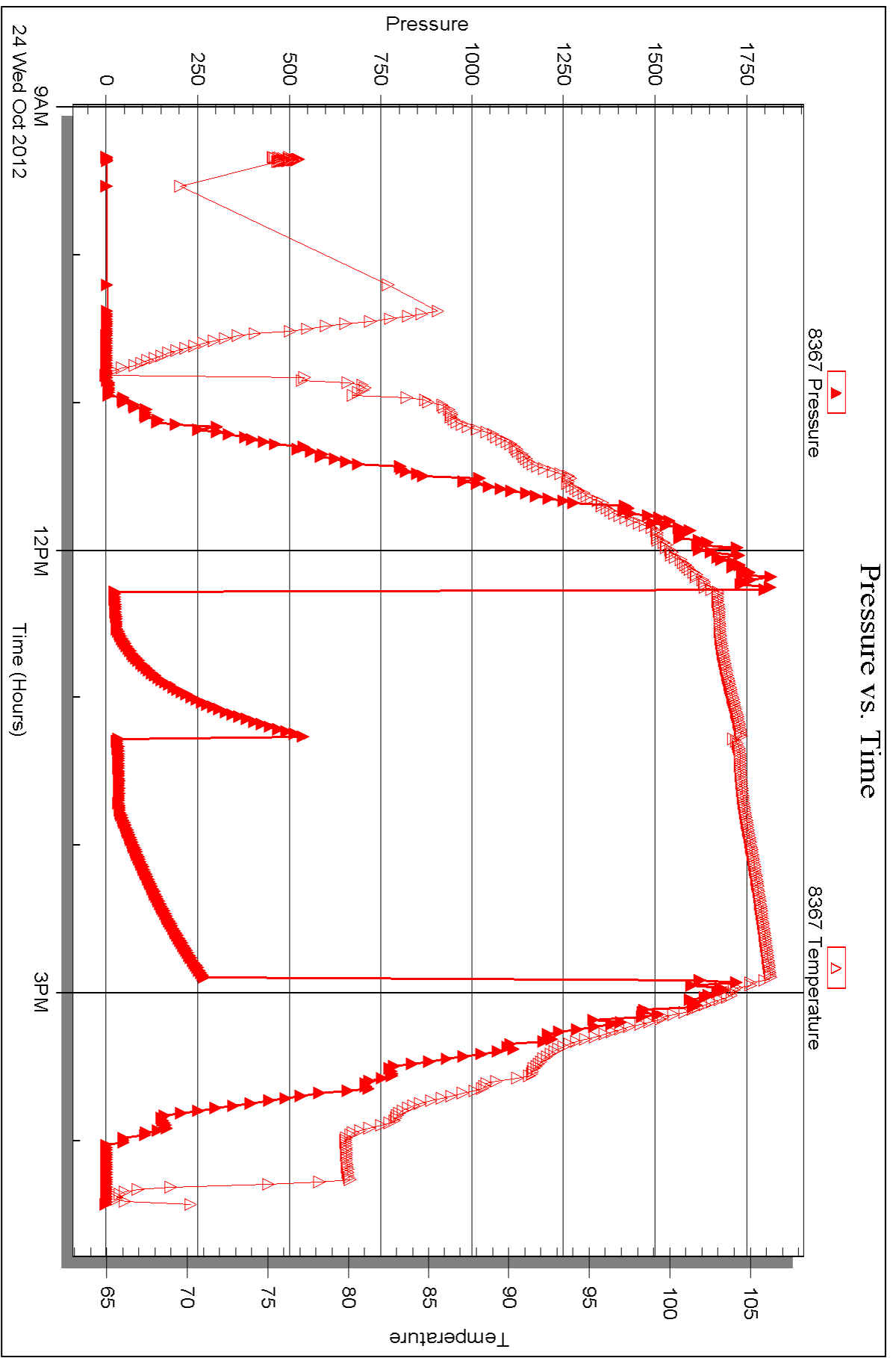
Printed: 2012.10.26 @ 09:52:16

Serial #: 8367

Outside Herrman L Loeb LLC

Musselman #4-34

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 49693

Printed: 2012.10.26 @ 09:52:17



## DRILL STEM TEST REPORT

Prepared For: **Herman L Loeb LLC**

PO Box 838  
Lawrenceville, IL 62439

ATTN: Jon Christensen

### **Musselman #4-34**

#### **34-21s-16w Pawnee,KS**

Start Date: 2012.10.25 @ 23:30:15

End Date: 2012.10.26 @ 07:35:00

Job Ticket #: 49694                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.10.26 @ 09:50:17





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Herman L Loeb LLC  
 PO Box 838  
 Lawrenceville, IL 62439  
 ATTN: Jon Christensen

**34-21s-16w Pawnee, KS**  
**Musselman #4-34**  
 Job Ticket: 49694 **DST#: 2**  
 Test Start: 2012.10.25 @ 23:30:15

## GENERAL INFORMATION:

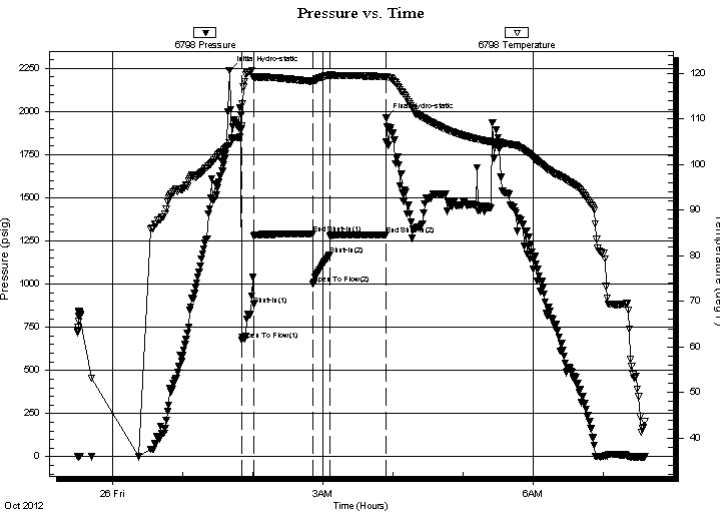
Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 01:50:30  
 Tester: Leal Cason  
 Time Test Ended: 07:35:00  
 Unit No: 45  
 Interval: **3866.00 ft (KB) To 3879.00 ft (KB) (TVD)**  
 Reference Elevations: 1997.00 ft (KB)  
 Total Depth: 3879.00 ft (KB) (TVD)  
 1986.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 11.00 ft

## Serial #: 6798

Inside

Press @ Run Depth: 1168.50 psig @ 3867.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.10.25 End Date: 2012.10.26 Last Calib.: 2012.10.26  
 Start Time: 23:30:16 End Time: 07:35:00 Time On Btm: 2012.10.26 @ 01:40:00  
 Time Off Btm: 2012.10.26 @ 03:54:15

**TEST COMMENT:** IF: Strong Blow , BOB in 15 seconds  
 IS: BOB Blow Back in 10 minutes, GTS in 29 minutes  
 FF: Strong Blow , BOB & GTS in 10 seconds, TSTM Caught Sample  
 FS: Would Not Bleed Off



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2238.27	104.72	Initial Hydro-static
11	677.22	108.45	Open To Flow (1)
21	881.47	119.02	Shut-In(1)
71	1290.11	118.27	End Shut-In(1)
72	1002.08	118.16	Open To Flow (2)
86	1168.50	119.60	Shut-In(2)
134	1287.36	119.31	End Shut-In(2)
135	1962.17	119.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	1495 GIP	0.00
2356.00	Gassy Oil 30%G 70%O	31.09

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Herman L Loeb LLC  
 PO Box 838  
 Lawrenceville, IL 62439  
 ATTN: Jon Christensen

**34-21s-16w Pawnee,KS**  
**Musselman #4-34**  
 Job Ticket: 49694 **DST#: 2**  
 Test Start: 2012.10.25 @ 23:30:15

**Tool Information**

Drill Pipe:	Length: 3636.00 ft	Diameter: 3.80 inches	Volume: 51.00 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 35000.00 lb
Drill Collar:	Length: 215.00 ft	Diameter: 2.25 inches	Volume: 1.06 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 52.06 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	3866.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	35.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Dropped Bar, Reversed Out

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3849.00	
Hydraulic tool	5.00			3854.00	
Safety Joint	2.00			3856.00	
Packer	5.00			3861.00	22.00 Bottom Of Top Packer
Packer	5.00			3866.00	
Stubb	1.00			3867.00	
Recorder	0.00	6798	Inside	3867.00	
Recorder	0.00	8367	Outside	3867.00	
Perforations	9.00			3876.00	
Bullnose	3.00			3879.00	13.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>35.00</b>				



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

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PO Box 838  
Lawrenceville, IL 62439  
ATTN: Jon Christensen

**34-21s-16w Pawnee,KS**  
**Musselman #4-34**  
Job Ticket: 49694      **DST#: 2**  
Test Start: 2012.10.25 @ 23:30:15

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 49 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.58 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 8300.00 ppm		
Filter Cake: 0.02 inches		

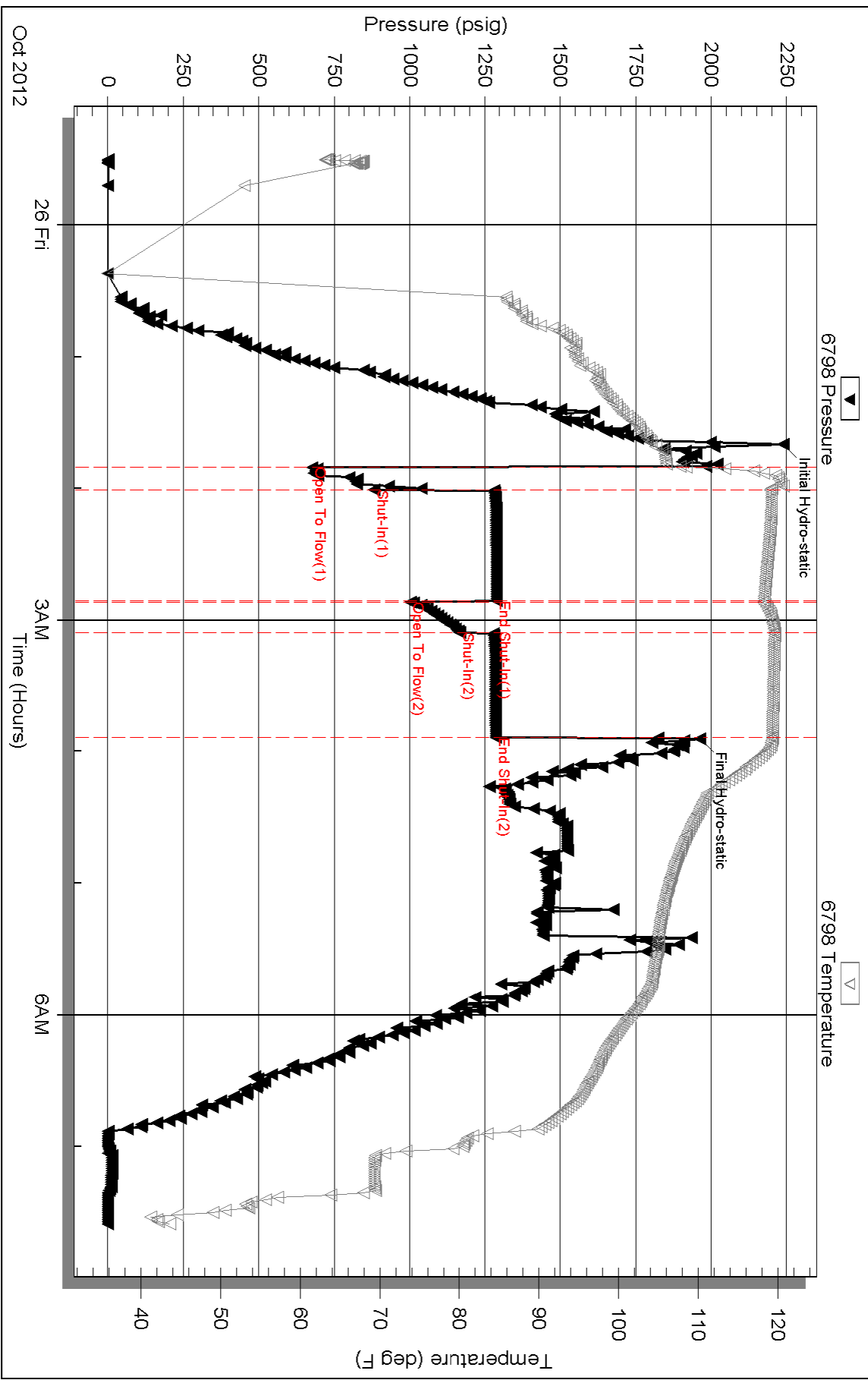
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	1495 GIP	0.000
2356.00	Gassy Oil 30%G 70%O	31.090

Total Length: 2356.00 ft      Total Volume: 31.090 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: Gravity w as 44.8 @ 38 degrees

### Pressure vs. Time



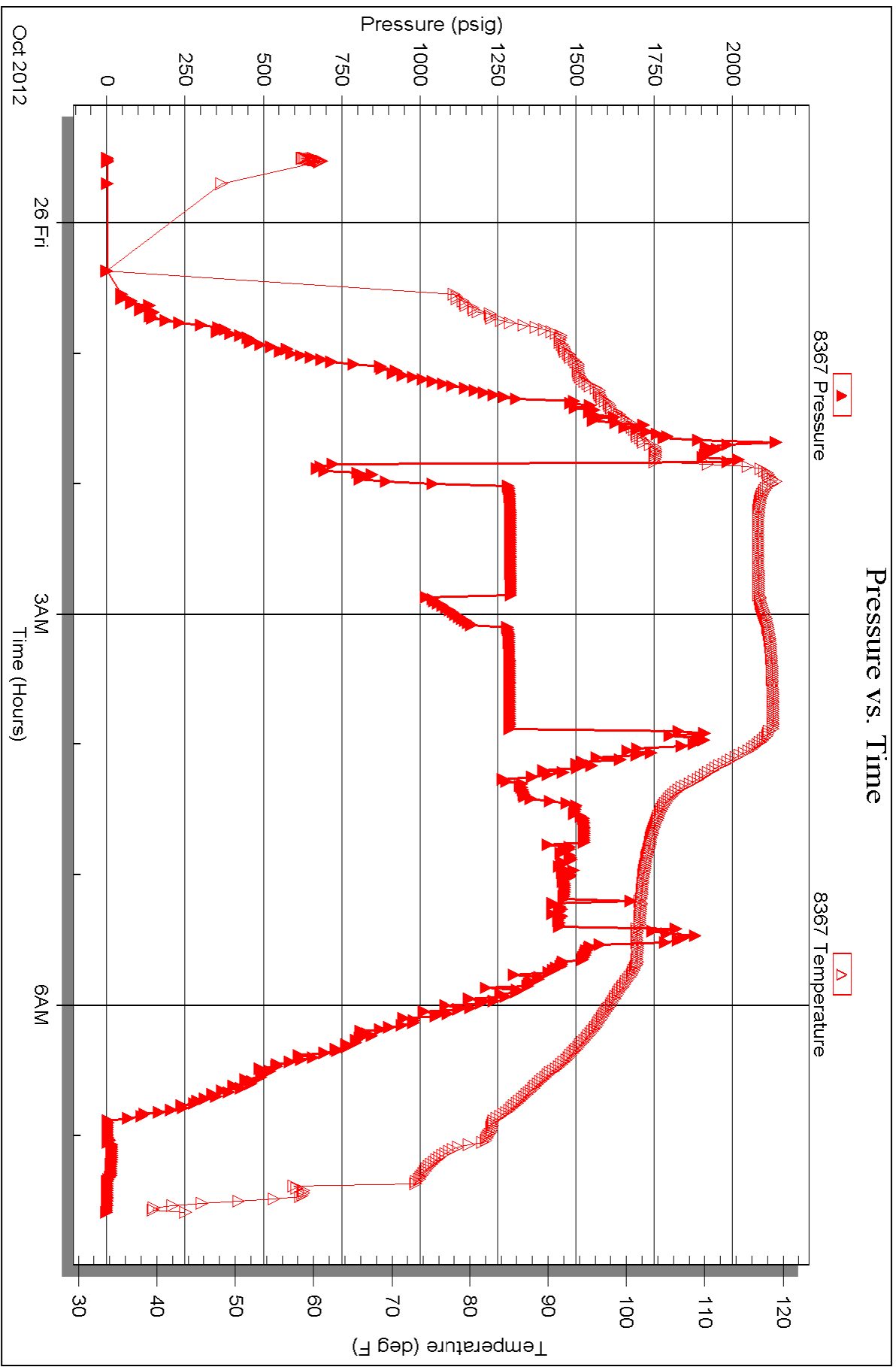
Serial #: 8367

Outside

Herrman L Loeb LLC

Musselman #4-34

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 49694

Printed: 2012.10.26 @ 09:50:22



# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49693

4/10

Well Name & No. Musselman 4-34 Test No. 1 Date 10/24/12  
 Company Herman L Loeb, LLC Elevation 1997 KB 1986 GL  
 Address PO Box 838 Lawrenceville, IL 62439  
 Co. Rep / Geo. Jon Christensen Rig Sterling 2  
 Location: Sec. 34 Twp. 21S Rge. 16W Co. Pawnee State KS

Interval Tested 3515 - 3551 Zone Tested Lansing "A+B"  
 Anchor Length 36 Drill Pipe Run 3283 Mud Wt. 8.8  
 Top Packer Depth 3570 Drill Collars Run 215 Vis 51  
 Bottom Packer Depth 3515 Wt. Pipe Run 0 WL 10.4  
 Total Depth 3551 Chlorides 8500 ppm System LCM

Blow Description IF: weak 1/2 inch Blow  
IS: NO Blow Back  
FF: Weak Blow Built to 4 inches  
FSI: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>GIP</u>				
<u>20</u>	<u>SGCM</u>	<u>2</u>			<u>98</u>

Rec Total 20 BHT 107 Gravity N/C API RW N/C @ N/C °F Chlorides N/C ppm

(A) Initial Hydrostatic <u>1877</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>08:00</u>
(B) First Initial Flow <u>20</u>	<input type="checkbox"/> Jars	T-Started <u>09:20</u>
(C) First Final Flow <u>27</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:16</u>
(D) Initial Shut-In <u>540</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>14:53</u>
(E) Second Initial Flow <u>28</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>16:26</u>
(F) Second Final Flow <u>36</u>	<input checked="" type="checkbox"/> Mileage <u>120</u> 186	Comments
(G) Final Shut-In <u>264</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1738</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1411</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1411</u>	

Approved By [Signature] 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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49694

Well Name & No. Musselman 4-34 Test No. 2 Date 10/25/12  
 Company Herman L Loeb, LLC Elevation 1997 KB 1986 GL  
 Address PO BOX 838 Lawrenceville, IL 62439  
 Co. Rep / Geo. Jon Christensen Rig Sterling 2  
 Location: Sec. 34 Twp. 21 S Rge. 16 W Co. Pawnee State KS

Interval Tested 3866 - 3879 Zone Tested Arbuckle  
 Anchor Length 13 Drill Pipe Run 3636 Mud Wt. 9.4  
 Top Packer Depth 3861 Drill Collars Run 215 Vis 56  
 Bottom Packer Depth 3866 Wt. Pipe Run 0 WL 9.6  
 Total Depth 3879 Chlorides 8300 ppm System LCM 1

Blow Description IF: strong Blow, BOB in 15 seconds  
ISI: BOB Blow Back in 10 minutes, GTS in 29 minutes  
FF: strong Blow, BOB + GTS in 10 seconds, TSTM, caught sample  
FSI: would not bleed off

Rec	Feet of	%gas	%oil	%water	%mud
<u>1495</u>	<u>Feet of GIP</u>				
<u>2356</u>	<u>Feet of Gassy oil</u>	<u>30</u>	<u>70</u>		
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2356 BHT 119 Gravity 49 API RW N/C @ N/C °F Chlorides N/C ppm

(A) Initial Hydrostatic 2238  Test 1150 T-On Location 22:45  
 (B) First Initial Flow 677  Jars \_\_\_\_\_ T-Started 23:30  
 (C) First Final Flow 881  Safety Joint 75 T-Open 01:50  
 (D) Initial Shut-In 1290  Circ Sub \_\_\_\_\_ T-Pulled 03:53  
 (E) Second Initial Flow 1002  Hourly Standby \_\_\_\_\_ T-Out 07:35  
 (F) Second Final Flow 1168  Mileage (120) 186 Comments \_\_\_\_\_  
 (G) Final Shut-In 1287  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1962  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_

Initial Open 15  Extra Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Recorder \_\_\_\_\_  
 Final Flow 15  Day Standby \_\_\_\_\_  
 Final Shut-In 45  Accessibility \_\_\_\_\_  
 Sub Total 1411

Sub Total 1411  
 Sub Total 0  
 Total 1411  
 MP/DST Disc't \_\_\_\_\_

Approved By [Signature] 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.