



## DRILL STEM TEST REPORT

Prepared For: **Herman L. Loeb, LLC.**

PO Box 838  
Lawrenceville, IL 62439

ATTN: Jon Christensen

### **Farmer #1-13**

### **13-27s-19w Kiowa,KS**

Start Date: 2013.05.05 @ 08:57:50

End Date: 2013.05.05 @ 15:54:20

Job Ticket #: 50485                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.15 @ 11:34:18



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

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

**13-27s-19w Kiowa,KS**

**Farmer #1-13**

Job Ticket: 50485

**DST#: 1**

Test Start: 2013.05.05 @ 08:57:50

## GENERAL INFORMATION:

Formation: **Lansing "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:10:50

Time Test Ended: 15:54:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Reynolds

Unit No: 48

**Interval: 4226.00 ft (KB) To 4242.00 ft (KB) (TVD)**

Reference Elevations: 2246.00 ft (KB)

Total Depth: 4242.00 ft (KB) (TVD)

2235.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

**Serial #: 8790 Inside**

Press @ Run Depth: 19.90 psig @ 4227.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.05

End Date:

2013.05.05

Last Calib.:

2013.05.05

Start Time: 08:57:55

End Time:

15:54:19

Time On Btm:

2013.05.05 @ 11:06:20

Time Off Btm:

2013.05.05 @ 13:42:50

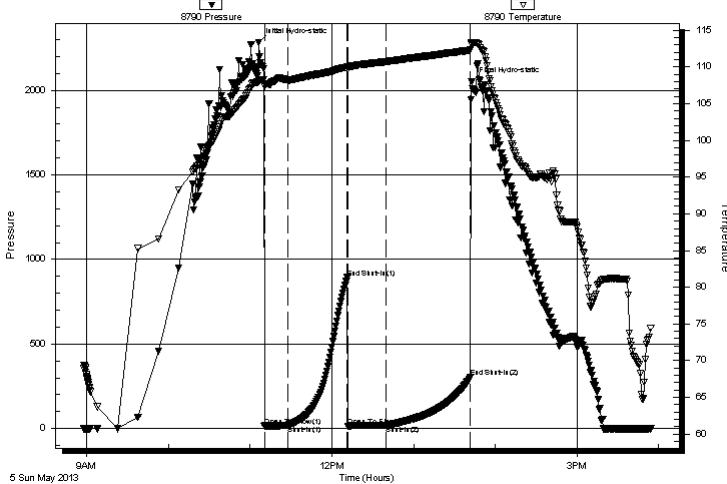
TEST COMMENT: IF: Weak blow 1/4" - Surf.

IS: No blow

FF: Weak blow 1/4" - 3/4"

FS: No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2283.41	108.04	Initial Hydro-static
5	15.00	107.72	Open To Flow (1)
22	19.77	108.22	Shut-In(1)
65	892.69	109.96	End Shut-In(1)
66	14.74	109.77	Open To Flow (2)
94	19.90	110.72	Shut-In(2)
156	300.83	112.27	End Shut-In(2)
157	2051.31	113.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	SLI OCM 1%oil, 99%mud	0.05
0.00	60' GIP, (Free oil in hyd. tool)	0.00

Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Herman L. Loeb, LLC.

**13-27s-19w Kiowa,KS**

PO Box 838  
Lawrenceville, IL 62439

**Farmer #1-13**

Job Ticket: 50485

**DST#: 1**

ATTN: Jon Christensen

Test Start: 2013.05.05 @ 08:57:50

## Tool Information

Drill Pipe:	Length: 4016.00 ft	Diameter: 3.80 inches	Volume: 56.33 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: 211.00 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 83000.00 lb
			<u>Total Volume: 57.37 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 69000.00 lb
Depth to Top Packer:	4226.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	38.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			4209.00	
Hydraulic tool	5.00			4214.00	
Safety Joint	2.00			4216.00	
Packer	5.00			4221.00	22.00 Bottom Of Top Packer
Packer	5.00			4226.00	
Stubb	1.00			4227.00	
Recorder	0.00	8790	Inside	4227.00	
Recorder	0.00	8792	Outside	4227.00	
Perforations	12.00			4239.00	
Bullnose	3.00			4242.00	16.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>38.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

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

**13-27s-19w Kiowa,KS**  
**Farmer #1-13**  
Job Ticket: 50485      **DST#: 1**  
Test Start: 2013.05.05 @ 08:57:50

## Mud and Cushion Information

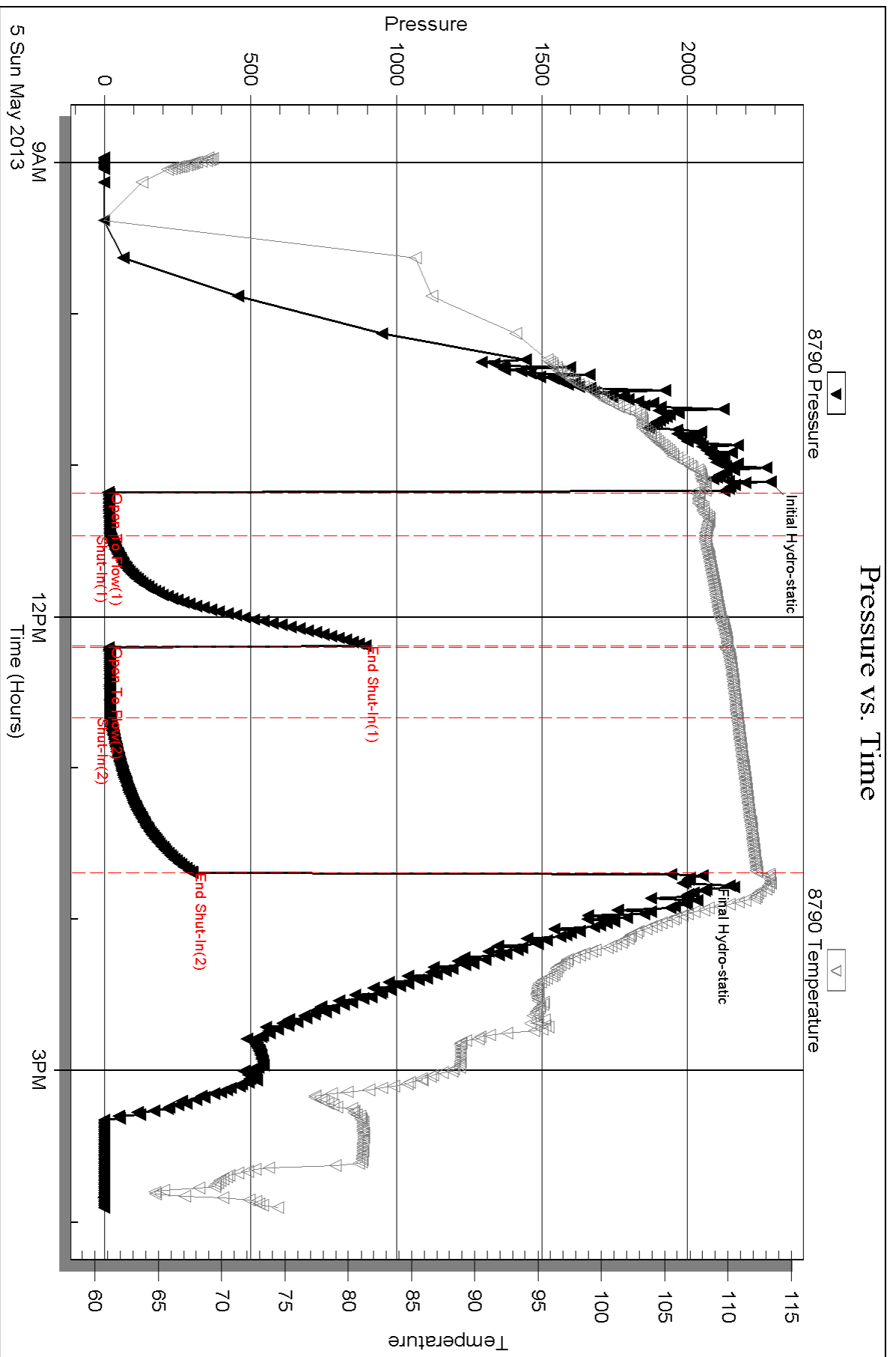
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	7000 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.98 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 7000.00 ppm			
Filter Cake: 0.02 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	SLI OCM 1%oil, 99%mud	0.049
0.00	60' GIP, (Free oil in hyd. tool)	0.000

Total Length: 10.00 ft      Total Volume: 0.049 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #: none  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

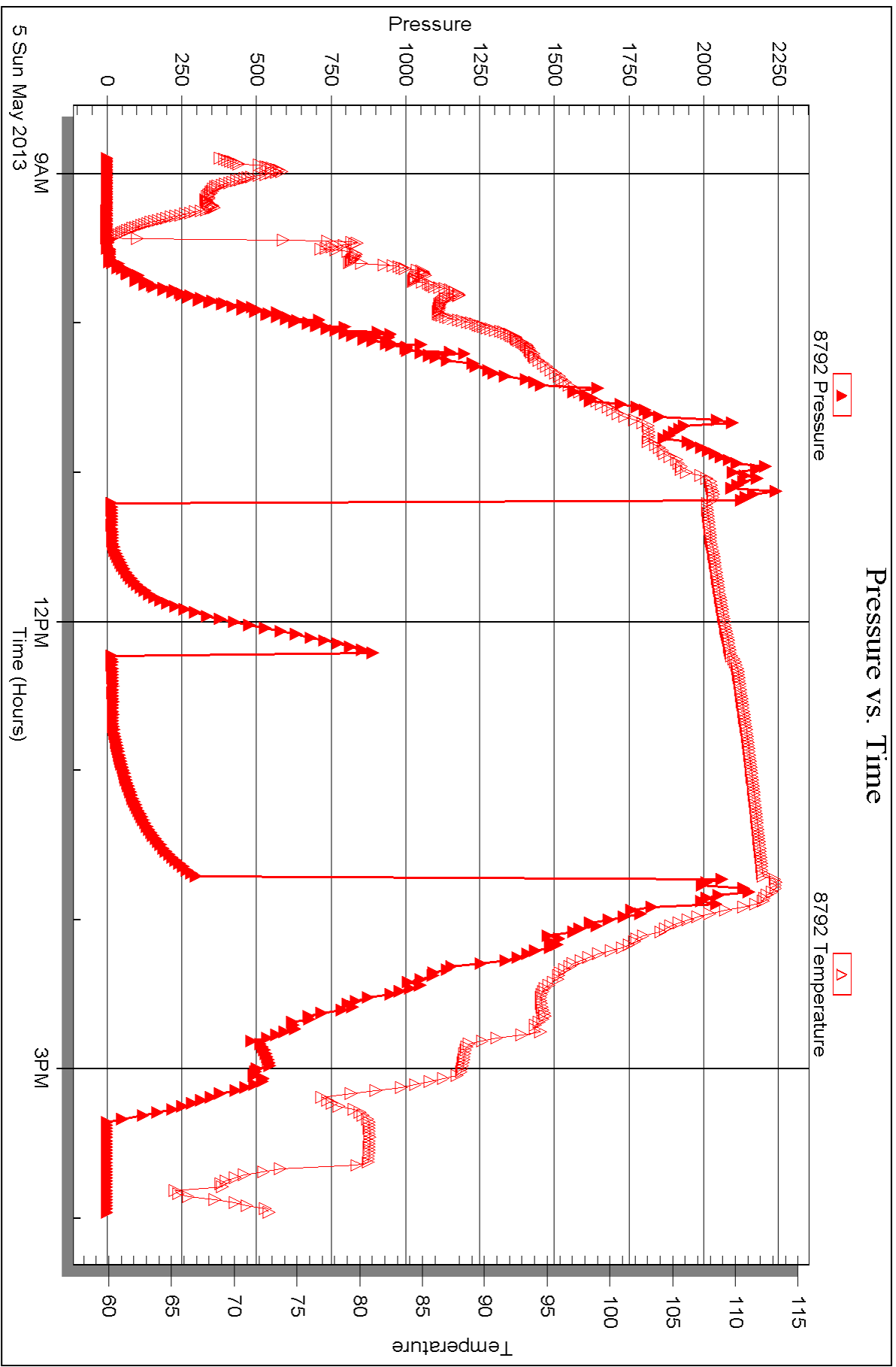


Serial #: 8792

Outside Herman L. Loeb, LLC.

Farmer #1-13

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Herman L. Loeb, LLC.**

PO Box 838  
Lawrenceville, IL 62439

ATTN: Jon Christensen

### **Farmer #1-13**

### **13-27s-19w Kiowa,KS**

Start Date: 2013.05.07 @ 17:58:14

End Date: 2013.05.08 @ 01:51:29

Job Ticket #: 50486                      DST #: 2

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

Printed: 2013.05.15 @ 11:33:21





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

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

**13-27s-19w Kiowa,KS**

**Farmer #1-13**

Job Ticket: 50486      **DST#: 2**  
 Test Start: 2013.05.07 @ 17:58:14

## GENERAL INFORMATION:

Formation: **Cherokee SS/ Miss.**  
 Deviated: No Whipstock:      ft (KB)  
 Time Tool Opened: 20:25:44  
 Time Test Ended: 01:51:29  
 Interval: **4767.00 ft (KB) To 4815.00 ft (KB) (TVD)**  
 Total Depth: 4815.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 48  
 Reference Elevations: 2246.00 ft (KB)  
 2235.00 ft (CF)  
 KB to GR/CF: 11.00 ft

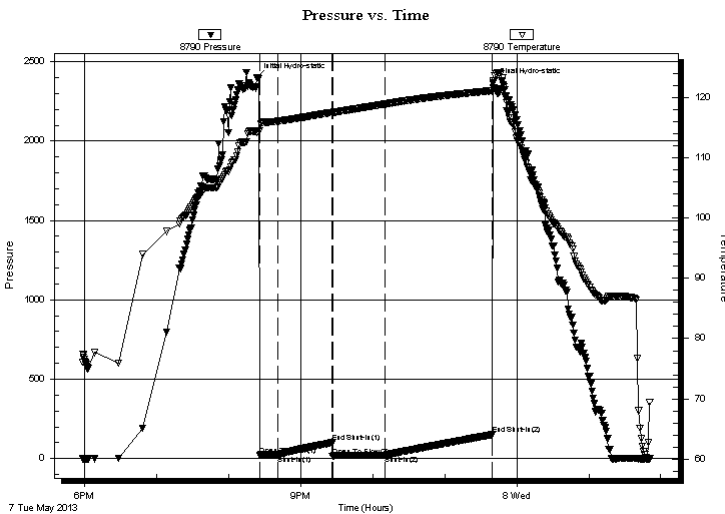
## Serial #: 8790

Inside

Press @ Run Depth: 21.00 psig @ 4768.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2013.05.07      End Date: 2013.05.08      Last Calib.: 2013.05.08  
 Start Time: 17:58:19      End Time: 01:51:28      Time On Btm: 2013.05.07 @ 20:23:44  
 Time Off Btm: 2013.05.07 @ 23:40:29

TEST COMMENT: IF: Good blow . 1/2" - 9"  
 IS: No blow  
 FF: Good blow . 3" - 10"  
 FS: No blow .

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2402.73	114.25	Initial Hydro-static
2	21.31	114.49	Open To Flow (1)
17	22.36	116.04	Shut-In(1)
63	99.84	117.53	End Shut-In(1)
63	12.86	117.49	Open To Flow (2)
107	21.00	118.90	Shut-In(2)
196	150.68	121.12	End Shut-In(2)
197	2365.92	122.29	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Drig mud 100% mud	0.05
0.00	350' GIP	0.00

\* 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.

**13-27s-19w Kiowa,KS**

PO Box 838  
Lawrenceville, IL 62439

**Farmer #1-13**

Job Ticket: 50486

**DST#: 2**

ATTN: Jon Christensen

Test Start: 2013.05.07 @ 17:58:14

## Tool Information

Drill Pipe:	Length: 4557.00 ft	Diameter: 3.80 inches	Volume: 63.92 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: 211.00 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 84000.00 lb
			<u>Total Volume: 64.96 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4767.00 ft			Final 77000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	70.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			4750.00	
Hydraulic tool	5.00			4755.00	
Safety Joint	2.00			4757.00	
Packer	5.00			4762.00	22.00 Bottom Of Top Packer
Packer	5.00			4767.00	
Stubb	1.00			4768.00	
Recorder	0.00	8790	Inside	4768.00	
Recorder	0.00	8792	Outside	4768.00	
Perforations	5.00			4773.00	
Change Over Sub	1.00			4774.00	
Drill Pipe	32.00			4806.00	
Change Over Sub	1.00			4807.00	
Perforations	5.00			4812.00	
Bullnose	3.00			4815.00	48.00 Bottom Packers & Anchor

**Total Tool Length: 70.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Herman L. Loeb, LLC.

**13-27s-19w Kiowa,KS**

PO Box 838  
Lawrenceville, IL 62439

**Farmer #1-13**

Job Ticket: 50486

**DST#: 2**

ATTN: Jon Christensen

Test Start: 2013.05.07 @ 17:58:14

## 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:

4400 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4400.00 ppm

Filter Cake: 0.02 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
10.00	Drig mud 100%mud	0.049
0.00	350' GIP	0.000

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

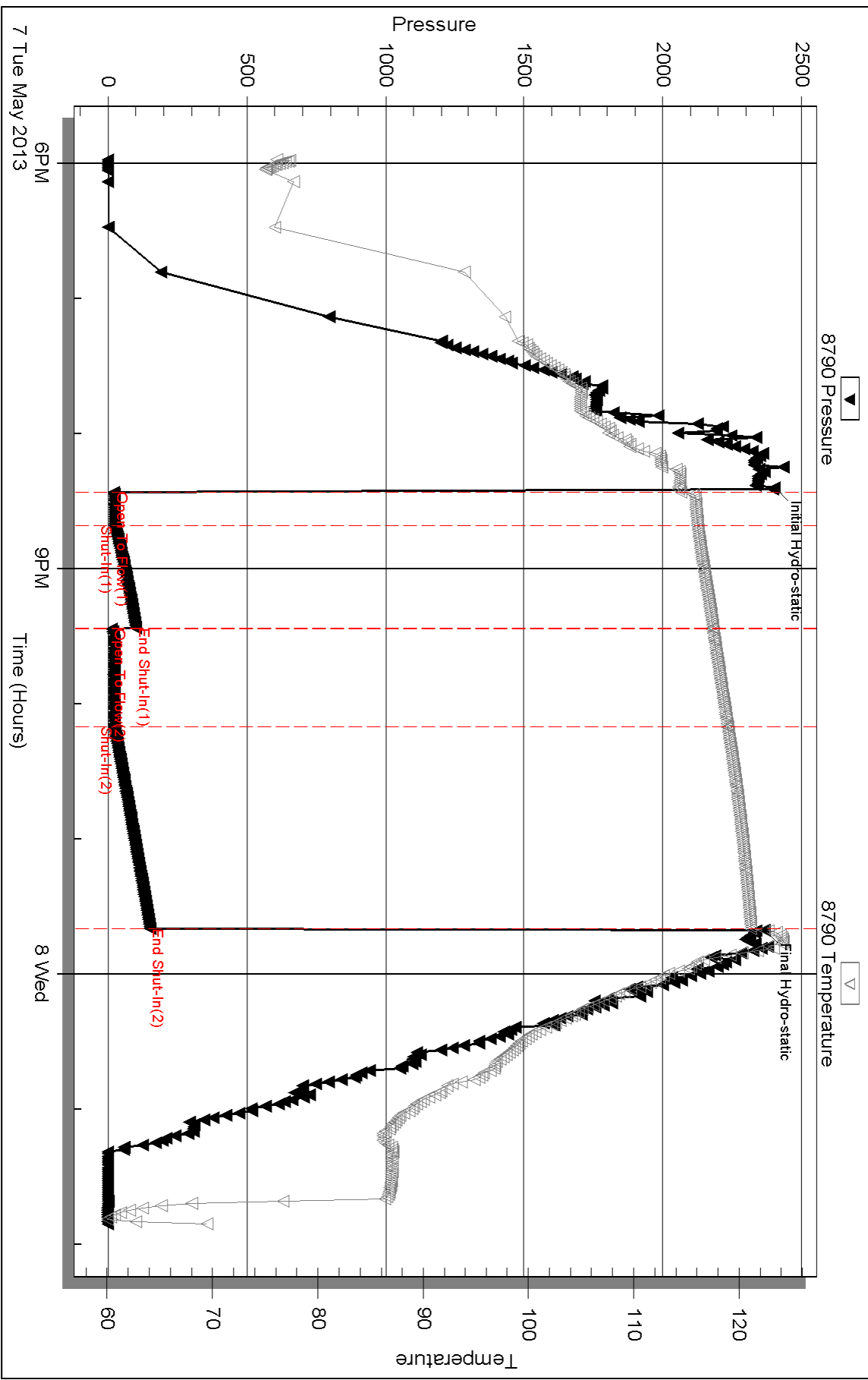
Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

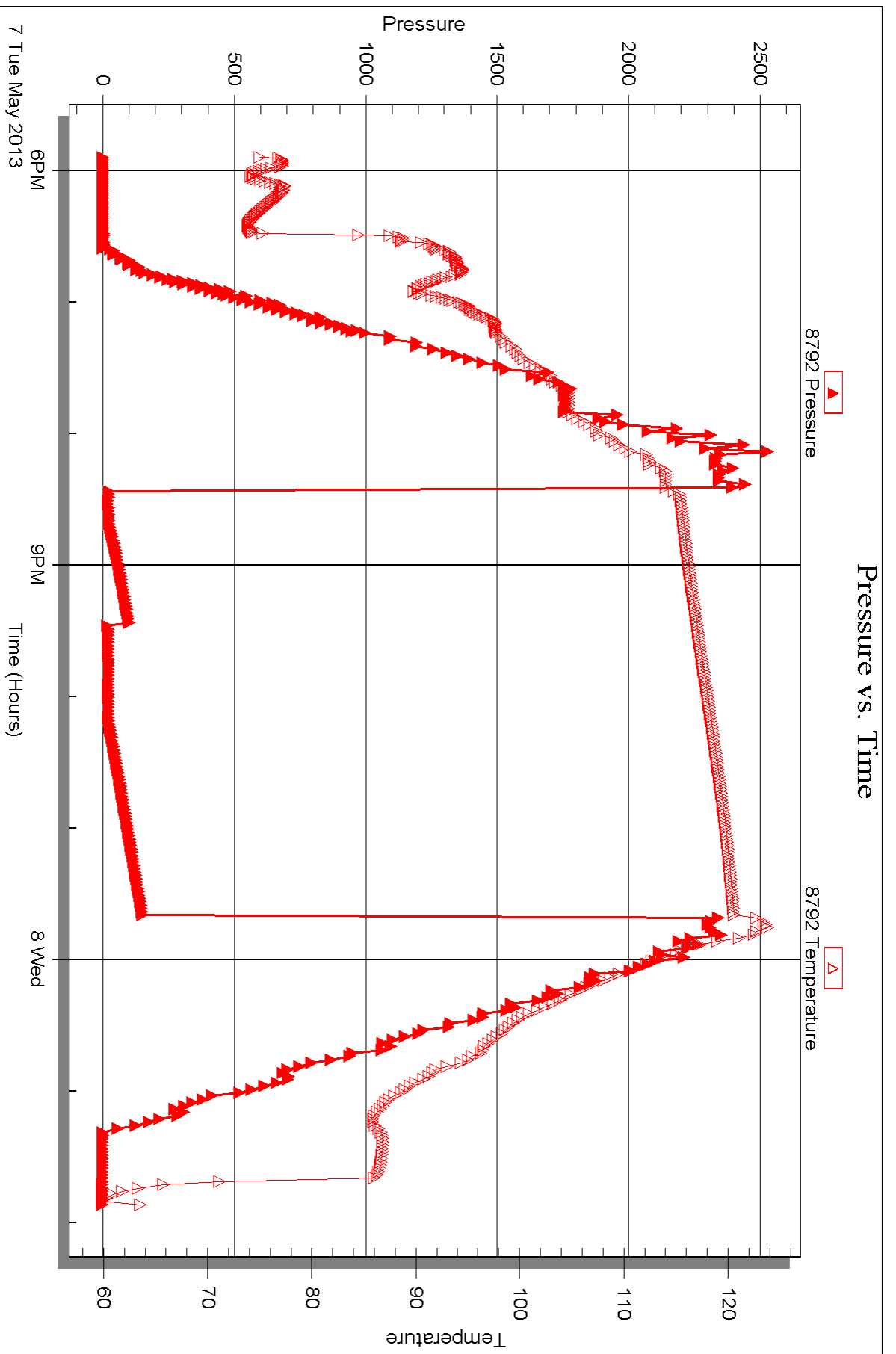


Serial #: 8792

Outside Herman L. Loeb, LLC.

Farmer #1-13

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 50486

Printed: 2013.05.15 @ 11:33:26



## DRILL STEM TEST REPORT

Prepared For: **Herman L. Loeb, LLC.**

PO Box 838  
Lawrenceville, IL 62439

ATTN: Jon Christensen

### **Farmer #1-13**

### **13-27s-19w Kiowa,KS**

Start Date: 2013.05.08 @ 10:06:06

End Date: 2013.05.08 @ 18:36:21

Job Ticket #: 50487                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.15 @ 11:36:47



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

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

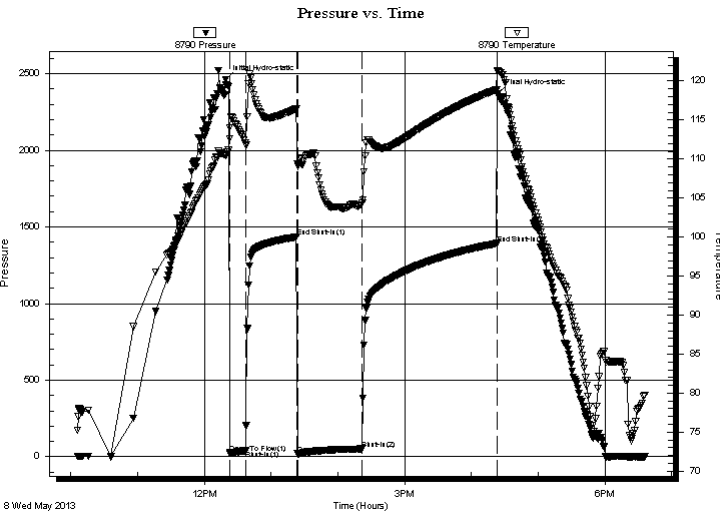
**13-27s-19w Kiowa,KS**  
**Farmer #1-13**  
 Job Ticket: 50487 **DST#: 3**  
 Test Start: 2013.05.08 @ 10:06:06

## GENERAL INFORMATION:

Formation: **Miss. Chert**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:22:51  
 Time Test Ended: 18:36:21  
 Interval: **4815.00 ft (KB) To 4838.00 ft (KB) (TVD)**  
 Total Depth: 4838.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 48  
 Reference Elevations: 2246.00 ft (KB)  
 2235.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8790 Inside**  
 Press @ Run Depth: 50.85 psig @ 4816.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.08 End Date: 2013.05.08 Last Calib.: 2013.05.08  
 Start Time: 10:06:11 End Time: 18:36:20 Time On Btm: 2013.05.08 @ 12:19:21  
 Time Off Btm: 2013.05.08 @ 16:23:36

**TEST COMMENT:** IF: Strong blow . BOB @ 15 sec. No GTS.  
 IS: GTS @ 1 min. into S.I. No blow  
 FF: Strong blow . BOB immed. Gauged gas throughout  
 FS: No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2460.98	110.42	Initial Hydro-static
4	22.05	114.00	Open To Flow (1)
18	38.99	111.88	Shut-In(1)
64	1434.63	116.50	End Shut-In(1)
65	17.21	109.11	Open To Flow (2)
123	50.85	104.39	Shut-In(2)
244	1392.05	118.90	End Shut-In(2)
245	2369.55	121.37	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	SLI OCM trc%oil, 99% mud	0.07
0.00	Hvy OSptdM in Hyd. tool	0.00
0.00	GTS	0.00

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	15.00	46.64
Last Gas Rate	0.25	26.00	64.09
Max. Gas Rate	0.25	26.00	64.09







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Herman L. Loeb, LLC.

**13-27s-19w Kiowa,KS**

PO Box 838  
Lawrenceville, IL 62439

**Farmer #1-13**

Job Ticket: 50487

**DST#: 3**

ATTN: Jon Christensen

Test Start: 2013.05.08 @ 10:06:06

## Tool Information

Drill Pipe:	Length: 4589.00 ft	Diameter: 3.80 inches	Volume: 64.37 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: 211.00 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose:	110000.0 lb
			<u>Total Volume: 65.41 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial	76000.00 lb
Depth to Top Packer:	4815.00 ft			Final	77000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	23.00 ft				
Tool Length:	45.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4798.00	
Hydraulic tool	5.00			4803.00	
Safety Joint	2.00			4805.00	
Packer	5.00			4810.00	22.00 Bottom Of Top Packer
Packer	5.00			4815.00	
Stubb	1.00			4816.00	
Recorder	0.00	8790	Inside	4816.00	
Recorder	0.00	8792	Outside	4816.00	
Perforations	19.00			4835.00	
Bullnose	3.00			4838.00	23.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>45.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

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

**13-27s-19w Kiowa,KS**  
**Farmer #1-13**  
Job Ticket: 50487      **DST#: 3**  
Test Start: 2013.05.08 @ 10:06:06

## Mud and Cushion Information

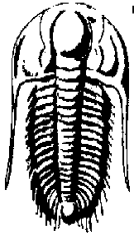
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	4400 ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.37 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4400.00 ppm			
Filter Cake: 0.02 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	SLI OCM trc%oil, 99%mud	0.074
0.00	Hvy OSptdM in Hyd. tool	0.000
0.00	GTS	0.000

Total Length: 15.00 ft      Total Volume: 0.074 bbl  
 Num Fluid Samples: 1      Num Gas Bombs: 1      Serial #: RR-1  
 Laboratory Name: Caraway      Laboratory Location: Liberal, KS  
 Recovery Comments:



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**GAS RATES**

Herman L. Loeb, LLC.

**13-27s-19w Kiowa,KS**

PO Box 838  
Lawrenceville, IL 62439

**Farmer #1-13**

Job Ticket: 50487

**DST#: 3**

ATTN: Jon Christensen

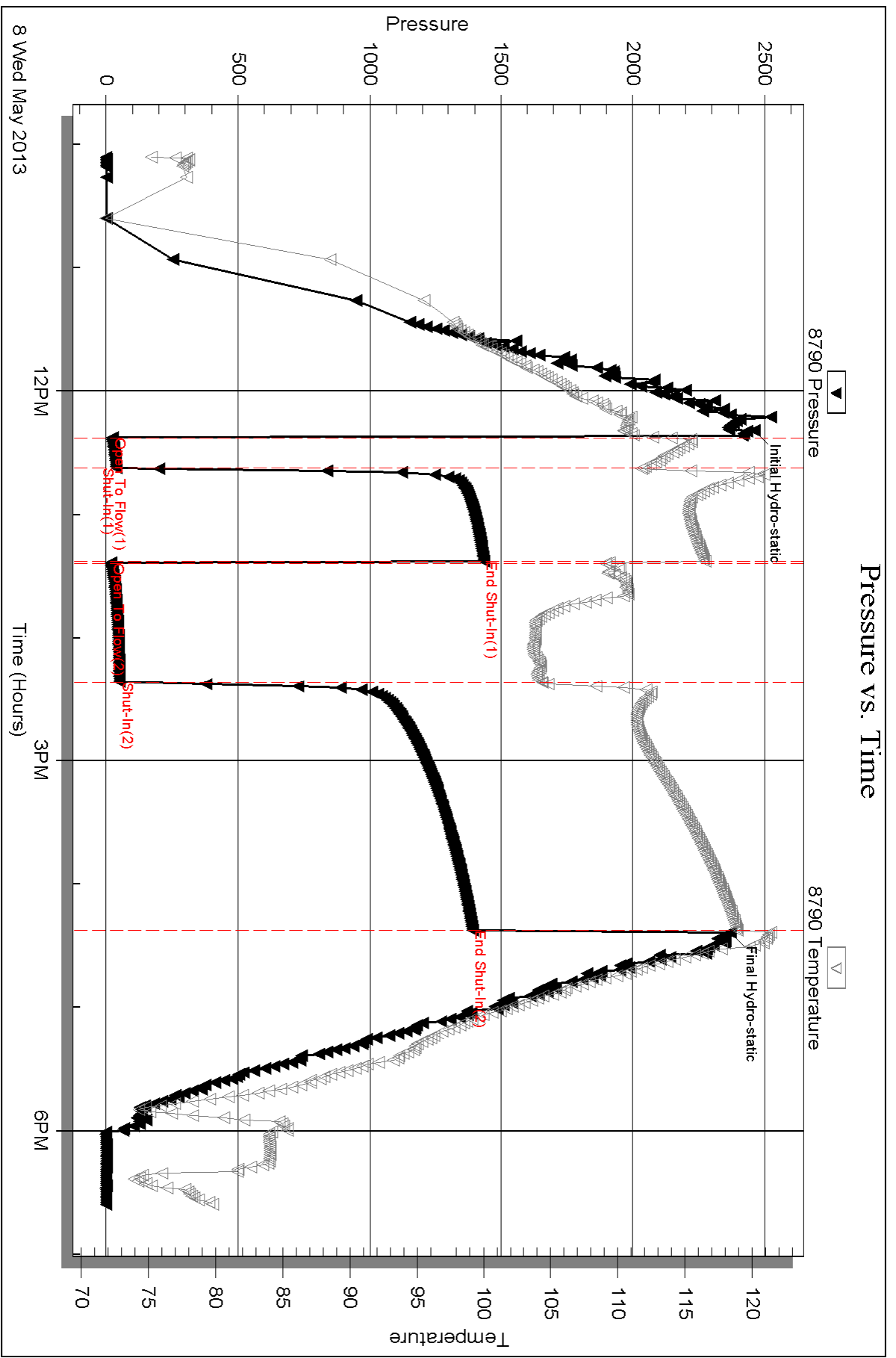
Test Start: 2013.05.08 @ 10:06:06

### Gas Rates Information

Temperature: 59 (deg F)  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	10	0.25	15.00	46.64
2	10	0.25	15.00	46.64
2	20	0.25	20.00	54.57
2	30	0.25	24.00	60.92
2	40	0.25	25.00	62.50
2	50	0.25	26.00	64.09

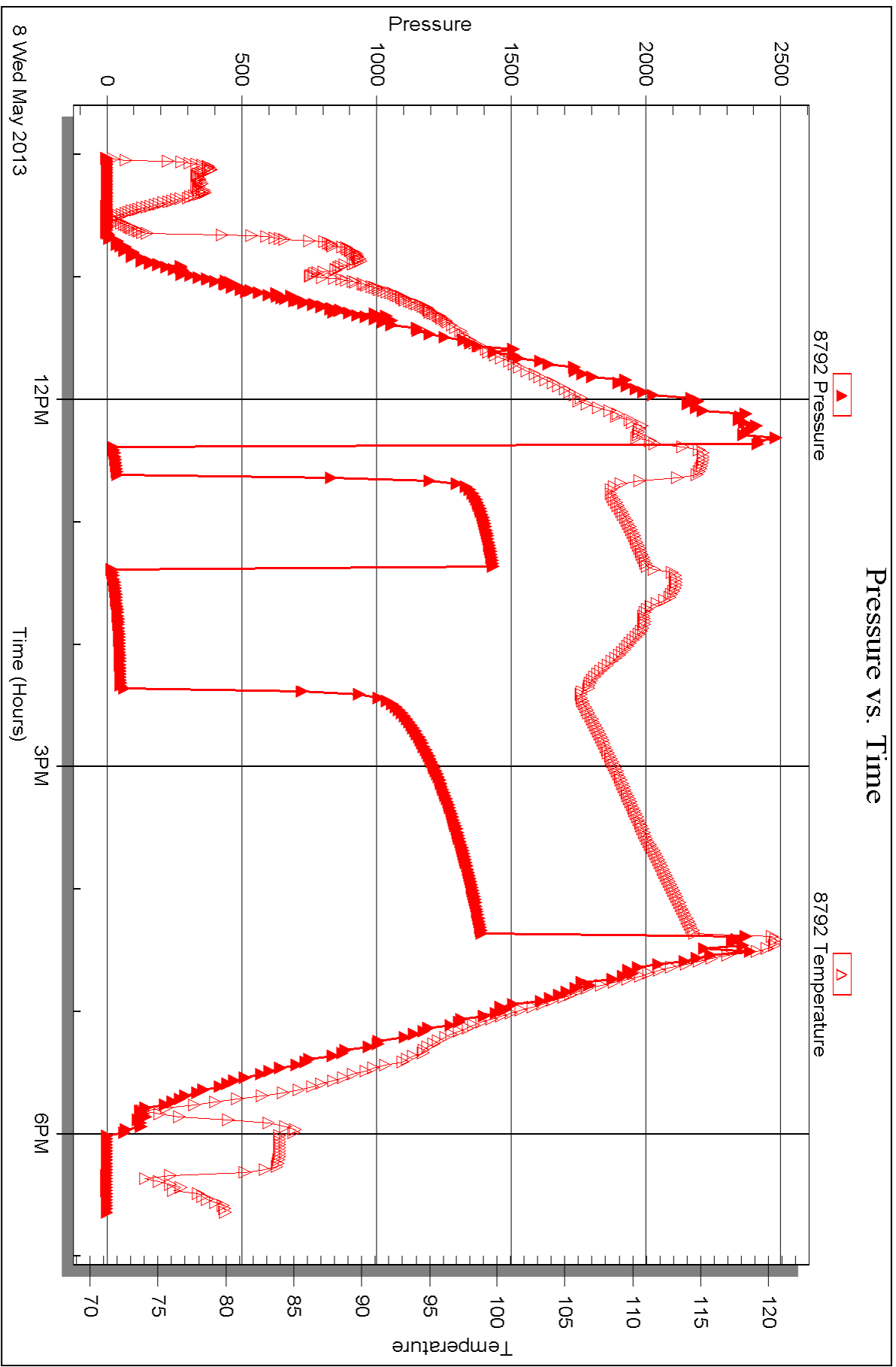


Serial #: 8792

Outside Herman L. Loeb, LLC.

Farmer #1-13

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Herman L. Loeb, LLC.**

PO Box 838  
Lawrenceville, IL 62439

ATTN: Jon Christensen

### **Farmer #1-13**

### **13-27s-19w Kiowa,KS**

Start Date: 2013.05.09 @ 01:47:58

End Date: 2013.05.09 @ 10:11:13

Job Ticket #: 50488                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.15 @ 11:26:23



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

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

**13-27s-19w Kiowa,KS**  
**Farmer #1-13**  
 Job Ticket: 50488 **DST#: 4**  
 Test Start: 2013.05.09 @ 01:47:58

## GENERAL INFORMATION:

Formation: **Miss. Chert**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 04:24:13  
 Time Test Ended: 10:11:13  
 Interval: **4838.00 ft (KB) To 4853.00 ft (KB) (TVD)**  
 Total Depth: 4853.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Reynolds  
 Unit No: 48  
 Reference Elevations: 2246.00 ft (KB)  
 2235.00 ft (CF)  
 KB to GR/CF: 11.00 ft

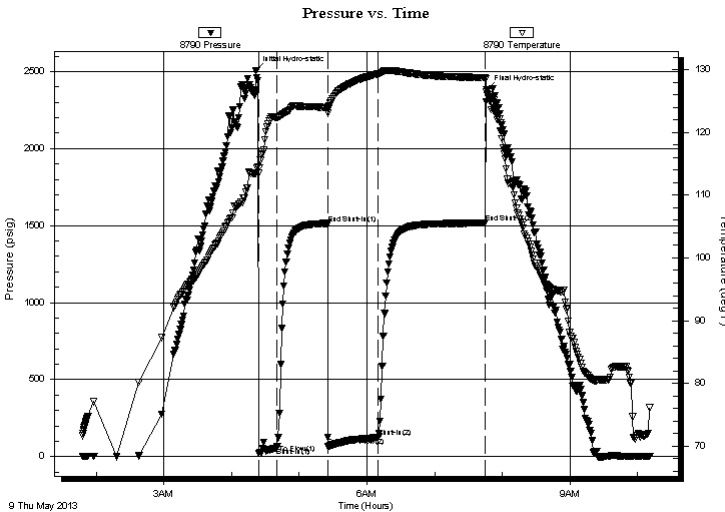
## Serial #: 8790

Inside

Press @ Run Depth: 125.67 psig @ 4839.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.09 End Date: 2013.05.09 Last Calib.: 2013.05.09  
 Start Time: 01:48:03 End Time: 10:11:12 Time On Btm: 2013.05.09 @ 04:21:43  
 Time Off Btm: 2013.05.09 @ 07:45:58

TEST COMMENT: IF: Fair blow . 1/4" - 5"  
 IS: No blow  
 FF: Good blow . 1/4" - 9"  
 FS: Weak surf. blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2507.16	113.62	Initial Hydro-static
3	20.62	113.49	Open To Flow (1)
19	58.70	122.32	Shut-In(1)
64	1514.80	124.02	End Shut-In(1)
64	66.20	123.73	Open To Flow (2)
109	125.67	129.36	Shut-In(2)
203	1516.48	128.77	End Shut-In(2)
205	2381.40	126.43	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
193.00	VSLI OCMW Trc%oil, 5%mud, 95%w tr	0.95
64.00	OCWM 5%oil, 45%w tr, 50%mud	0.73
0.00	63' GIP	0.00

\* 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

**13-27s-19w Kiowa,KS**  
**Farmer #1-13**  
Job Ticket: 50488      **DST#: 4**  
Test Start: 2013.05.09 @ 01:47:58

**Tool Information**

Drill Pipe:	Length: 4621.00 ft	Diameter: 3.80 inches	Volume: 64.82 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: 211.00 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 85000.00 lb
		Total Volume: 65.86 bbl		Tool Chased 1.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4838.00 ft			Final 79000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	15.00 ft			
Tool Length:	37.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4821.00	
Hydraulic tool	5.00			4826.00	
Safety Joint	2.00			4828.00	
Packer	5.00			4833.00	22.00 Bottom Of Top Packer
Packer	5.00			4838.00	
Stubb	1.00			4839.00	
Recorder	0.00	8790	Inside	4839.00	
Recorder	0.00	8792	Outside	4839.00	
Perforations	11.00			4850.00	
Bullnose	3.00			4853.00	15.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>37.00</b>				



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

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

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

**13-27s-19w Kiowa,KS**  
**Farmer #1-13**  
Job Ticket: 50488      **DST#: 4**  
Test Start: 2013.05.09 @ 01:47:58

**Mud and Cushion Information**

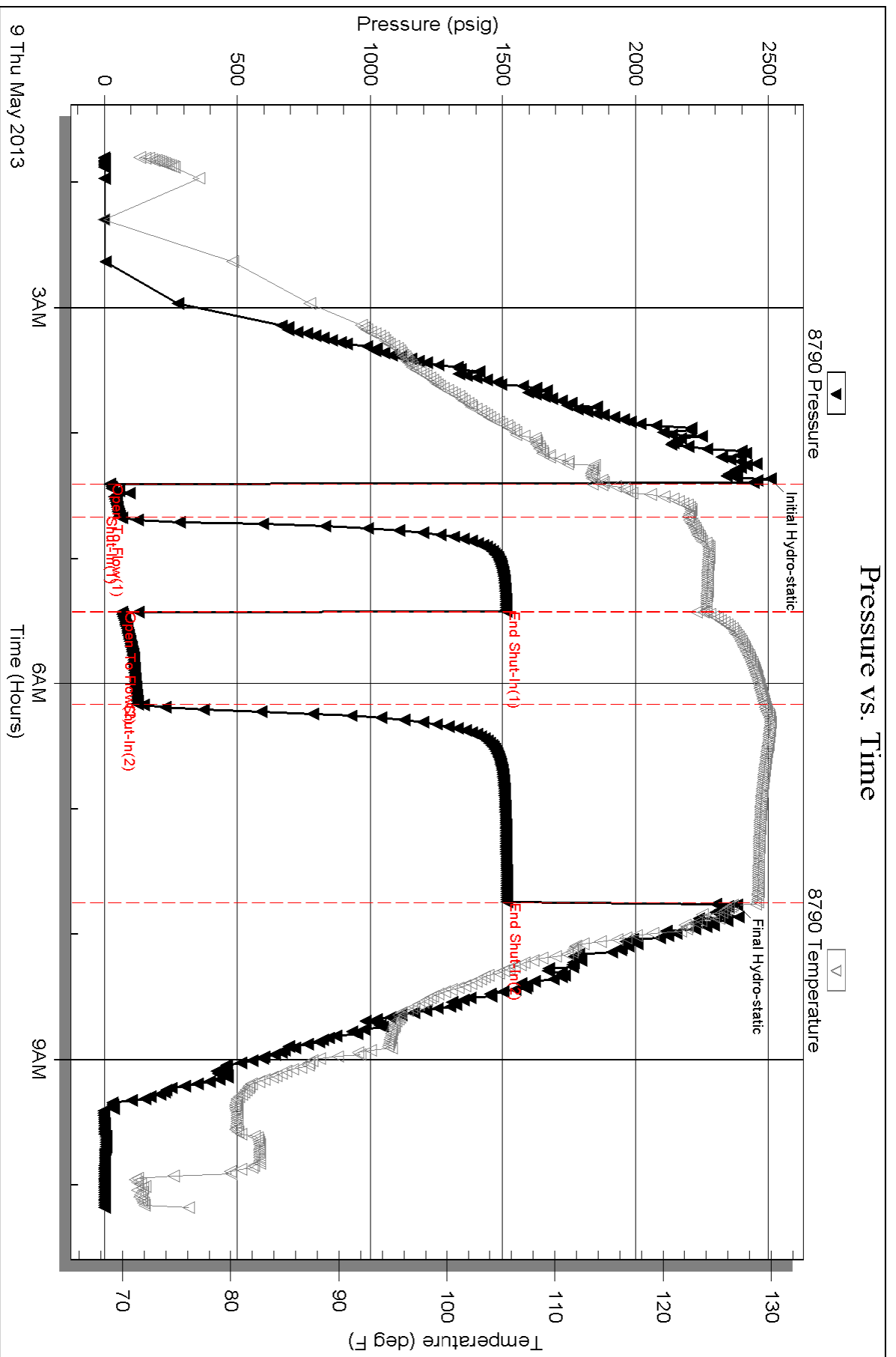
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 92000 ppm	
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5400.00 ppm			
Filter Cake: 0.02 inches			

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
193.00	VSLI OCMW Trc%oil, 5%mud, 95%w tr	0.949
64.00	OCWM 5%oil, 45%w tr, 50%mud	0.734
0.00	63' GIP	0.000

Total Length: 257.00 ft      Total Volume: 1.683 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #: none  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

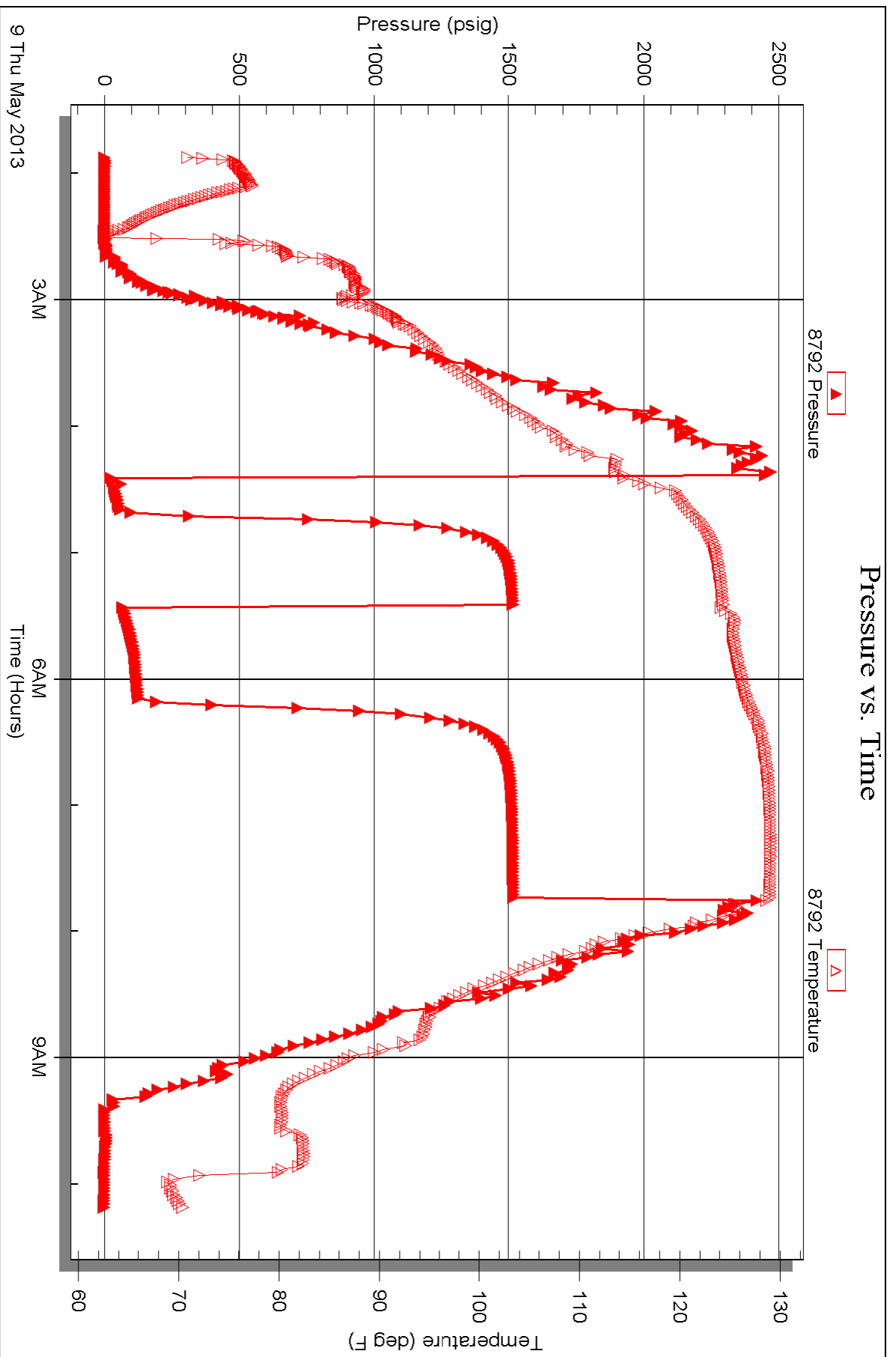


Serial #: 8792

Outside Herman L. Loeb, LLC.

Farmer #1-13

DST Test Number: 4





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50485

4/10

Well Name & No. Farmer #1-13 Test No. 1 Date 5-5-13  
 Company Herman L. Loeb, LLC Elevation 2246 KB 2235 GL  
 Address P.O. Box 838 Lawrenceville, IL 62439  
 Co. Rep / Geo. Jon Christensen Rig Sterling #2  
 Location: Sec. 13 Twp. 27s. Rge. 19w. Co. Kiowa State KS

Interval Tested 4226-4242 Zone Tested Lansing "A"  
 Anchor Length 16 Drill Pipe Run 4016 Mud Wt. 9.3  
 Top Packer Depth 4221 Drill Collars Run 211 Vis 59  
 Bottom Packer Depth 4226 Wt. Pipe Run ∅ WL 8.0  
 Total Depth 4242 Chlorides 7000 ppm System LCM 1#  
 Blow Description IF: Weak blow. 1/4" - Surf. ISI: No blow

FF: Weak blow. 1/4" - 3/4"

FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>GIP</u>				
<u>10</u>	<u>SLI 0cm</u>		<u>1</u>		<u>99</u>
	<u>(Free oil in hyd. tool)</u>				

Rec Total 70 BHT 113 Gravity N/C API RW N/C @ N/C °F Chlorides 7000 ppm

(A) Initial Hydrostatic	<u>2283</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>0845</u>
(B) First Initial Flow	<u>15</u>	<input type="checkbox"/> Jars		T-Started	<u>0858</u>
(C) First Final Flow	<u>20</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>1111</u>
(D) Initial Shut-In	<u>893</u>	<input type="checkbox"/> Circ Sub		T-Pulled	<u>1342</u>
(E) Second Initial Flow	<u>15</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>1554</u>
(F) Second Final Flow	<u>20</u>	<input checked="" type="checkbox"/> Mileage	<u>92</u> 142.60	Comments	
(G) Final Shut-In	<u>301</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2051</u>	<input type="checkbox"/> Straddle		<input type="checkbox"/> Ruined Shale Packer	

Initial Open	<u>15</u>	<input type="checkbox"/> Shale Packer		<input type="checkbox"/> Ruined Packer	
Initial Shut-In	<u>45</u>	<input type="checkbox"/> Extra Packer		<input type="checkbox"/> Extra Copies	
Final Flow	<u>30</u>	<input checked="" type="checkbox"/> Extra Recorder		Sub Total	<u>0</u>
Final Shut-In	<u>60</u>	<input checked="" type="checkbox"/> Day Standby	<u>2</u>	Total	<u>1467.60</u>
		<input type="checkbox"/> Accessibility		MP/DST Disc't	
		Sub Total	<u>1467.60</u>		

Approved By [Signature] Our Representative Ryan Reynolds  
 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. 50486

4/10

Well Name & No. Farmer 1-13 Test No. 2 Date 5-7-13  
 Company Herman L. Loeb, LLC. Elevation 2246 KB 2235 GL  
 Address P.O. Box 838 Lawrenceville, IL 62439  
 Co. Rep / Geo. Jon Christensen Rig Sterling #2  
 Location: Sec. 13 Twp. 27s. Rge. 19w. Co. Kiowa State KS

Interval Tested 4767-4815 Zone Tested Cherokee SS / Miss.  
 Anchor Length 48' Drill Pipe Run 4557 Mud Wt. 9.4  
 Top Packer Depth 4762 Drill Collars Run 211 Vis 50  
 Bottom Packer Depth 4767 Wt. Pipe Run Ø WL 10.4  
 Total Depth 4815 Chlorides 4400 ppm System LCM 1#  
 Blow Description IF: Good blow. 1/2" - 9" IST: No blow

FF: Good blow. 3" - 10"  
FST: No blow.

Rec	Feet of	%gas	%oil	%water	%mud
<u>350</u>	<u>GTP</u>	<u>100</u>			
<u>10</u>	<u>Dry mud</u>			<u>100</u>	

Rec Total 360 BHT 122 Gravity N/L API RW N/L @ N/L °F Chlorides 4400 ppm

(A) Initial Hydrostatic 2403  Test 1250 T-On Location 1740  
 (B) First Initial Flow 21  Jars \_\_\_\_\_ T-Started 1758  
 (C) First Final Flow 22  Safety Joint 75 T-Open 2026  
 (D) Initial Shut-In 100  Circ Sub \_\_\_\_\_ T-Pulled 2339  
 (E) Second Initial Flow 13  Hourly Standby \_\_\_\_\_ T-Out 0151  
 (F) Second Final Flow 21  Mileage 92 142.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 151  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2366  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Sub Total 841.67  
 Initial Open 15  Day Standby 1d 25.25h Total 2309.27  
 Initial Shut-In 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Flow 45 Sub Total 1467.60  
 Final Shut-In 90

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.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50487

4/10

Well Name & No. Farmer 1-13 Test No. 3 Date 5-8-13  
 Company Herman L. Loeb, LLC. Elevation 2246 KB 2235 GL  
 Address P.O. Box 838 Lawrenceville, IL 62439  
 Co. Rep / Geo. Jon Christensen Rig Sterling #2  
 Location: Sec. 13 Twp. 27s. Rge. 19w. Co. Kiowa State KS

Interval Tested 4815-4838 Zone Tested Miss. Chert  
 Anchor Length 23 Drill Pipe Run 4589 Mud Wt. 9.4  
 Top Packer Depth 4810 Drill Collars Run 211 Vis 50  
 Bottom Packer Depth 4815 Wt. Pipe Run X WL 10.4  
 Total Depth 4838 Chlorides 4400 ppm System LCM 1#

Blow Description IF: Strong blow. BOB @ 15 sec. No GTS  
ISI: GTS 1 min. into bleed off. No blow  
FF: Strong blow. BOB immed. Gauged gas throughout.  
FSTI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>SLI 0cm</u>	<u>Tr</u>		<u>99+</u>	
Rec	Feet of <u>(No Spd oil/mud in hgt tool)</u>	%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 15 BHT 121 Gravity N/C API RW N/C @ N/C °F Chlorides 4400 ppm  
 (A) Initial Hydrostatic 2461  Test 1250 T-On Location 0945  
 (B) First Initial Flow 22  Jars T-Started 1006  
 (C) First Final Flow 39  Safety Joint 75 T-Open 1223  
 (D) Initial Shut-In 1435  Circ Sub T-Pulled 1622  
 (E) Second Initial Flow 17  Hourly Standby T-Out 1836  
 (F) Second Final Flow 51  Mileage 92 142.60 Comments  
 (G) Final Shut-In 1392  Sampler  
 (H) Final Hydrostatic 2370  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies

Initial Open 15  Extra Recorder Sub Total 0  
 Initial Shut-In 45  Day Standby Total 1467.60  
 Final Flow 60  Accessibility MP/DST Disc't  
 Final Shut-In 120  Sub Total 1467.60

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 of 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. 50488

Well Name & No. Farmer 1-13 Test No. 4 Date 5-9-13  
 Company Herman L. Loeb, LLC Elevation 2246 KB 2235 GL  
 Address P.O. Box 838 Lawrenceville, IL 62439  
 Co. Rep / Geo. Jon Christensen Rig Sterling 2  
 Location: Sec. 13 Twp. 27s. Rge. 19w. Co. Kiowa State KS

Interval Tested 4838-4853 Zone Tested Miss. Chert  
 Anchor Length 15 Drill Pipe Run 4621 Mud Wt. 9.4+  
 Top Packer Depth 4833 Drill Collars Run 211 Vis 52  
 Bottom Packer Depth 4838 Wt. Pipe Run Ø WL 9.6  
 Total Depth 4853 Chlorides 5400 ppm System LCM 2#  
 Blow Description IF: Fair blow, 1/4" - 5" ISI: No blow  
FF: Good blow, 1/4" - 9"  
FSI: Weak surf. blow.

Rec	Feet of	%gas	%oil	%water	%mud
63	GIP	100			
64	OLWM		5	45	50
193	VSLI OLWM		Trc	95	5

Rec Total 320 BHT 129 Gravity N/C API RW 008 @ 74 °F Chlorides 92000 ppm

(A) Initial Hydrostatic 2507  Test 1250 T-On Location 0145  
 (B) First Initial Flow 21  Jars T-Started 0148  
 (C) First Final Flow 59  Safety Joint 75 T-Open 0424  
 (D) Initial Shut-In 1515  Circ Sub T-Pulled 0740  
 (E) Second Initial Flow 66  Hourly Standby T-Out 1011  
 (F) Second Final Flow 126  Mileage 142.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 1516  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2381  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 15  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 90

Sub Total 1467.60 Total 1467.60 MP/DST Disc't \_\_\_\_\_

Approved By [Signature] Our Representative Ryan Reynolds  
 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 of 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.