



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd
Olmitz KS 67564

ATTN: Vern Schrag

Boomhower "A" 1-16

16-17s-29w Lane,KS

Start Date: 2013.09.02 @ 07:38:15

End Date: 2013.09.02 @ 13:30:15

Job Ticket #: 52909 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.09.10 @ 10:24:16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc
 562 West State Rd
 Olmitz KS 67564
 ATTN: Vern Schrag

16-17s-29w Lane, KS
Boomhower "A" 1-16
 Job Ticket: 52909 **DST#: 1**
 Test Start: 2013.09.02 @ 07:38:15

GENERAL INFORMATION:

Formation: **LKC E**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:48:45
 Time Test Ended: 13:30:15
 Interval: **4035.00 ft (KB) To 4051.00 ft (KB) (TVD)**
 Total Depth: 4051.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2826.00 ft (KB)
 2819.00 ft (CF)
 KB to GR/CF: 7.00 ft

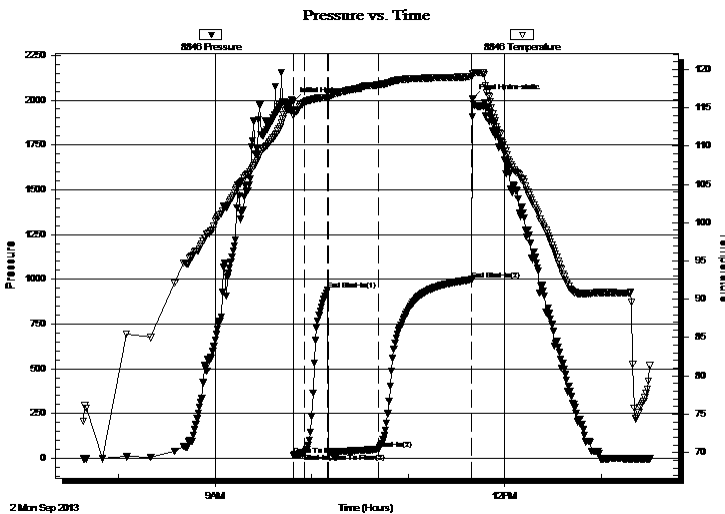
Serial #: 8846

Outside

Press @ Run Depth: 51.23 psig @ 4036.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.02 End Date: 2013.09.02 Last Calib.: 2013.09.02
 Start Time: 07:38:15 End Time: 13:30:15 Time On Btm: 2013.09.02 @ 09:48:30
 Time Off Btm: 2013.09.02 @ 11:40:00

TEST COMMENT: IF: Built to 1" blow
 IS: No return blow
 FF: Built to 2 1/2" blow
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1992.44	114.70	Initial Hydro-static
1	18.40	113.96	Open To Flow (1)
7	28.12	115.68	Shut-In(1)
22	939.42	116.30	End Shut-In(1)
22	30.71	116.27	Open To Flow (2)
53	51.23	117.96	Shut-In(2)
111	998.07	119.04	End Shut-In(2)
112	2008.96	119.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 92 feet	0.00
117.00	GCOM 5%g 35% o 60%m	0.58

Gas Rates

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



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Larson Engineering Inc
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16-17s-29w Lane, KS
Boomhower "A" 1-16
 Job Ticket: 52909 **DST#: 1**
 Test Start: 2013.09.02 @ 07:38:15

GENERAL INFORMATION:

Formation: **LKC E**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 09:48:45 Tester: Mike Roberts
 Time Test Ended: 13:30:15 Unit No: 65
Interval: 4035.00 ft (KB) To 4051.00 ft (KB) (TVD)
 Reference Elevations: 2826.00 ft (KB)
 Total Depth: 4051.00 ft (KB) (TVD) 2819.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

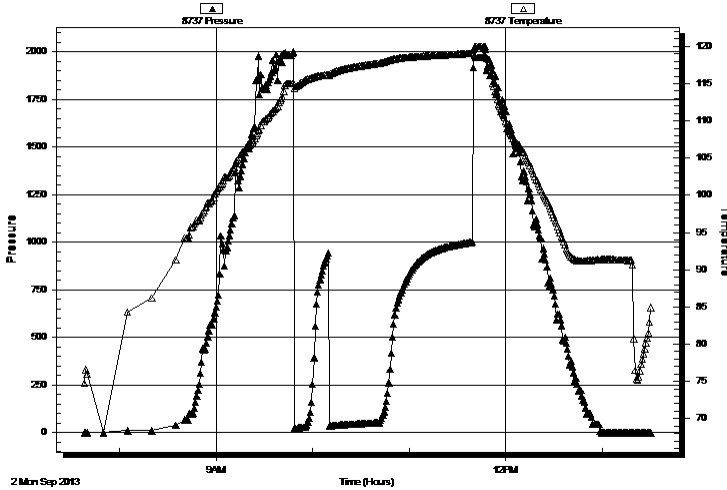
Serial #: 8737

Inside

Press @ Run Depth: psig @ 4036.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.02 End Date: 2013.09.02 Last Calib.: 2013.09.02
 Start Time: 07:38:15 End Time: 13:30:00 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Built to 1" blow
 IS: No return blow
 FF: Built to 2 1/2" blow
 FS: No return blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 92 feet	0.00
117.00	GCOM 5%g 35% o 60%m	0.58

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52909

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.02 @ 07:38:15

Tool Information

Drill Pipe:	Length: 3885.00 ft	Diameter: 3.80 inches	Volume: 54.50 bbl	Tool Weight: 1500.00 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: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 55.22 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	4035.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	44.00 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			4008.00	
Shut In Tool	5.00			4013.00	
Hydraulic tool	5.00			4018.00	
Jars	5.00			4023.00	
Safety Joint	3.00			4026.00	
Packer	5.00			4031.00	28.00 Bottom Of Top Packer
Packer	4.00			4035.00	
Stubb	1.00			4036.00	
Recorder	0.00	8737	Inside	4036.00	
Recorder	0.00	8846	Outside	4036.00	
Perforations	10.00			4046.00	
Bullnose	5.00			4051.00	16.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52909

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.02 @ 07:38:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.83 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	GIP= 92 feet	0.000
117.00	GCOM 5%g 35% o 60%m	0.575

Total Length: 117.00 ft

Total Volume: 0.575 bbl

Num Fluid Samples: 0

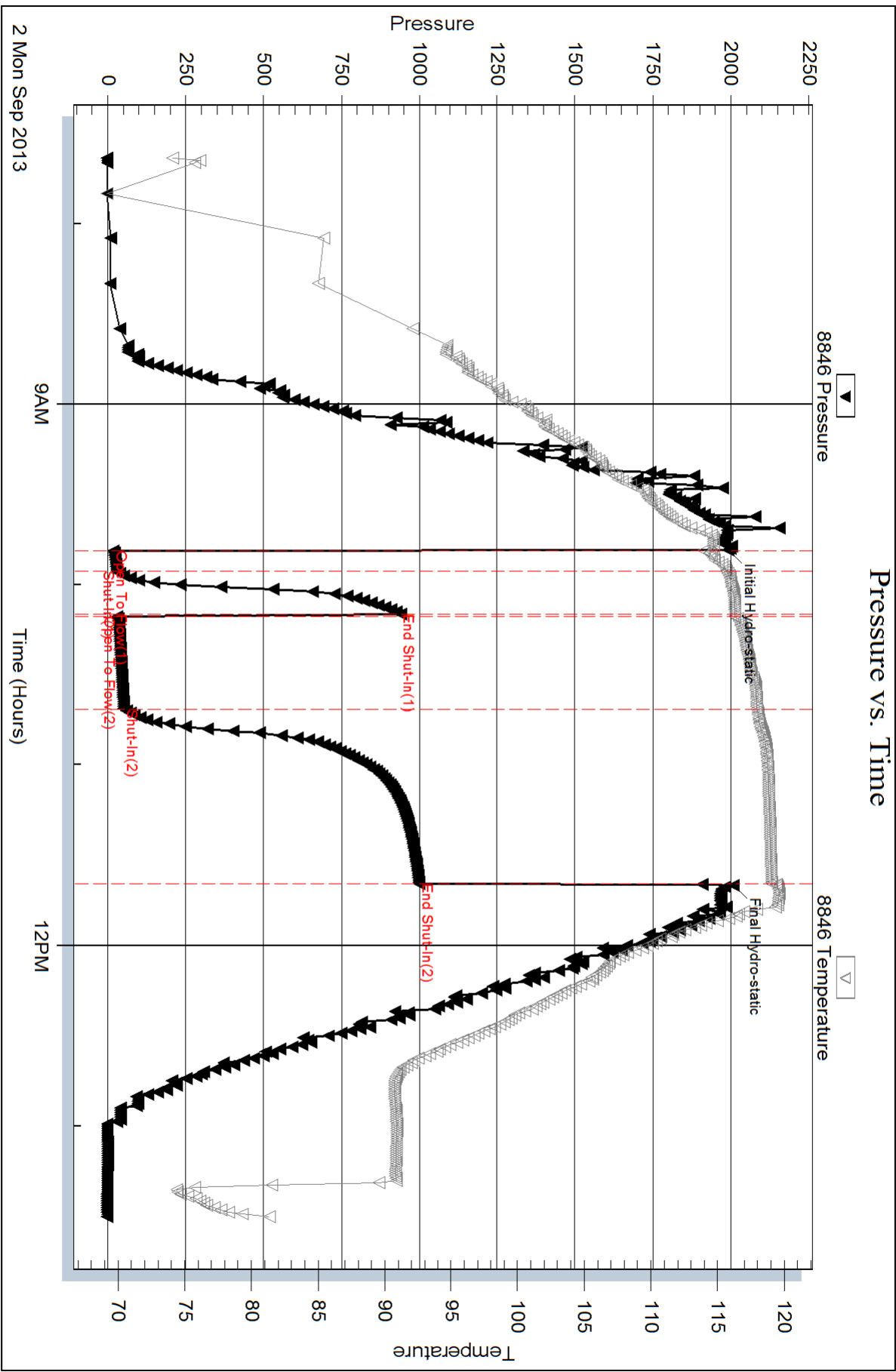
Num Gas Bombs: 0

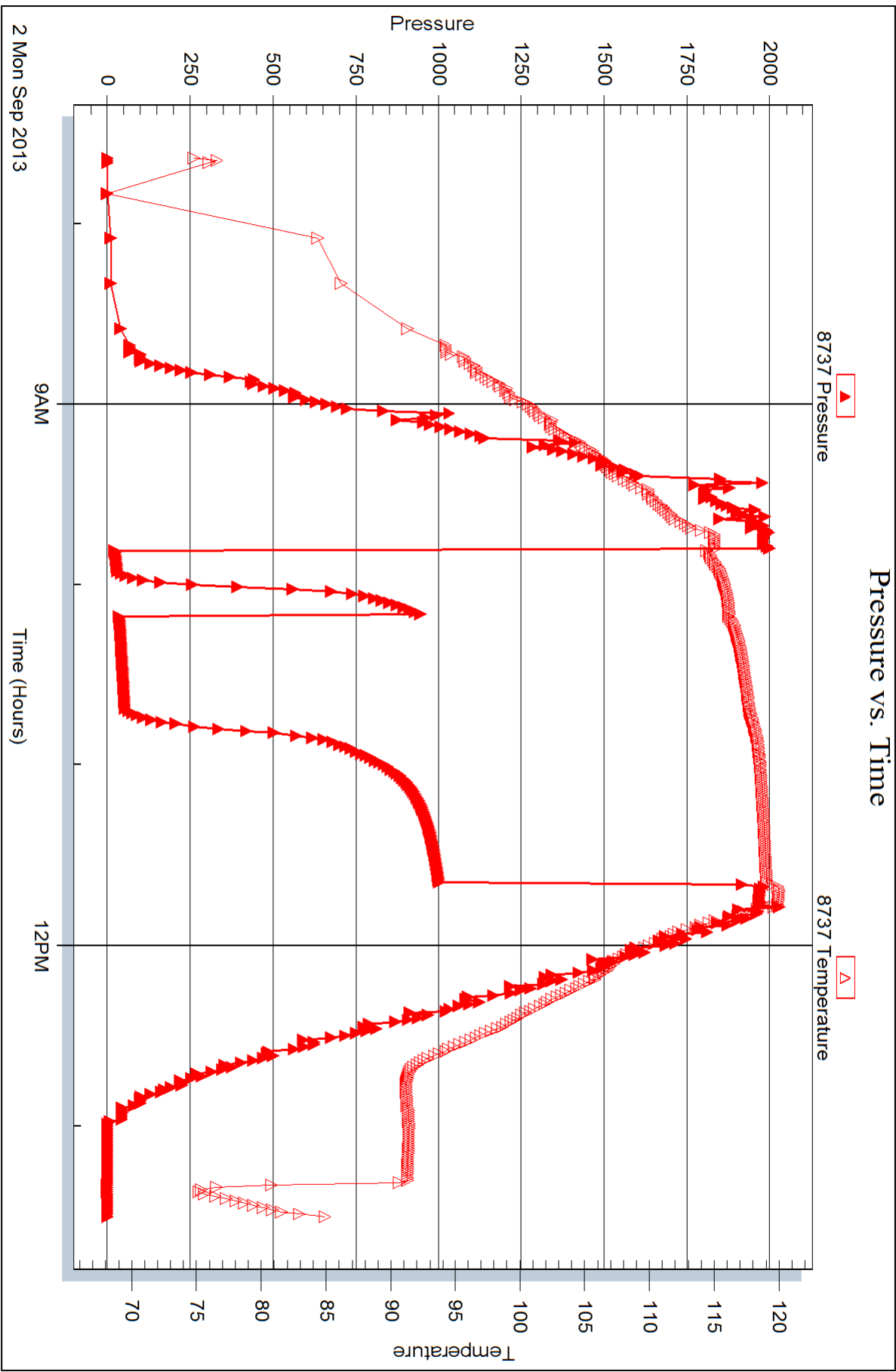
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd
Olmitz KS 67564

ATTN: Vern Schrag

Boomhower "A" 1-16

16-17s-29w Lane,KS

Start Date: 2013.09.03 @ 07:05:15

End Date: 2013.09.03 @ 12:32:30

Job Ticket #: 52910 DST #: 2

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

Printed: 2013.09.10 @ 10:23:45



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52910

DST#: 2

Test Start: 2013.09.03 @ 07:05:15

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:56:30

Time Test Ended: 12:32:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: 4130.00 ft (KB) To 4155.00 ft (KB) (TVD)

Total Depth: 4155.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2826.00 ft (KB)

2819.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8846 Outside

Press @ Run Depth: 60.69 psig @ 4131.00 ft (KB)

Start Date: 2013.09.03

End Date: 2013.09.03

Start Time: 07:05:15

End Time: 12:32:30

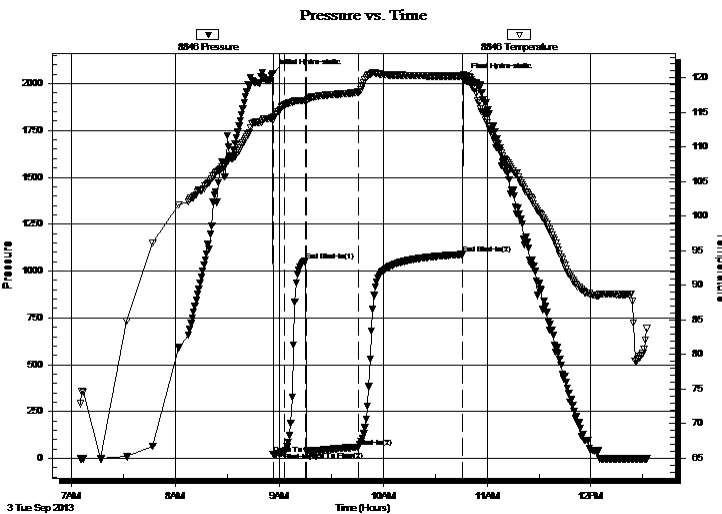
Capacity: 8000.00 psig

Last Calib.: 2013.09.03

Time On Btm: 2013.09.03 @ 08:56:15

Time Off Btm: 2013.09.03 @ 10:46:45

TEST COMMENT: IF: Built to 1" blow
IS: No return blow
FF: BOB in 29 min.
FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2052.03	114.28	Initial Hydro-static
1	20.54	113.97	Open To Flow (1)
7	31.42	116.07	Shut-In(1)
19	1055.10	116.72	End Shut-In(1)
20	37.68	116.64	Open To Flow (2)
50	60.69	117.91	Shut-In(2)
110	1088.61	120.28	End Shut-In(2)
111	2030.25	120.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 62	0.00
117.00	GCMO 20%g 40%m 40%o	0.58

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52910

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 07:05:15

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:56:30

Time Test Ended: 12:32:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4130.00 ft (KB) To 4155.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4155.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8737**

Inside

Press @ RunDepth: psig @ 4131.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.03

End Date: 2013.09.03

Last Calib.: 2013.09.03

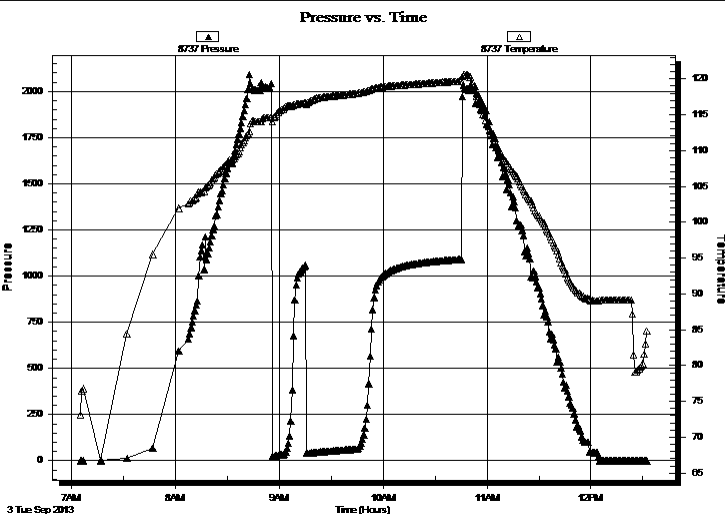
Start Time: 07:05:15

End Time: 12:32:15

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Built to 1" blow
IS: No return blow
FF: BOB in 29 min.
FS: No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	GIP= 62	0.00
117.00	GCMO 20%g 40%m 40%o	0.58

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52910

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 07:05:15

Tool Information

Drill Pipe:	Length: 3970.00 ft	Diameter: 3.80 inches	Volume: 55.69 bbl	Tool Weight:	1500.00 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: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 56.41 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	53000.00 lb
Depth to Top Packer:	4130.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	25.00 ft				
Tool Length:	53.00 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			4103.00	
Shut In Tool	5.00			4108.00	
Hydraulic tool	5.00			4113.00	
Jars	5.00			4118.00	
Safety Joint	3.00			4121.00	
Packer	5.00			4126.00	28.00 Bottom Of Top Packer
Packer	4.00			4130.00	
Stubb	1.00			4131.00	
Recorder	0.00	8737	Inside	4131.00	
Recorder	0.00	8846	Outside	4131.00	
Perforations	19.00			4150.00	
Bullnose	5.00			4155.00	25.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52910

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 07:05:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.72 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	GIP= 62	0.000
117.00	GCMO 20%g 40%m 40%o	0.575

Total Length: 117.00 ft

Total Volume: 0.575 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

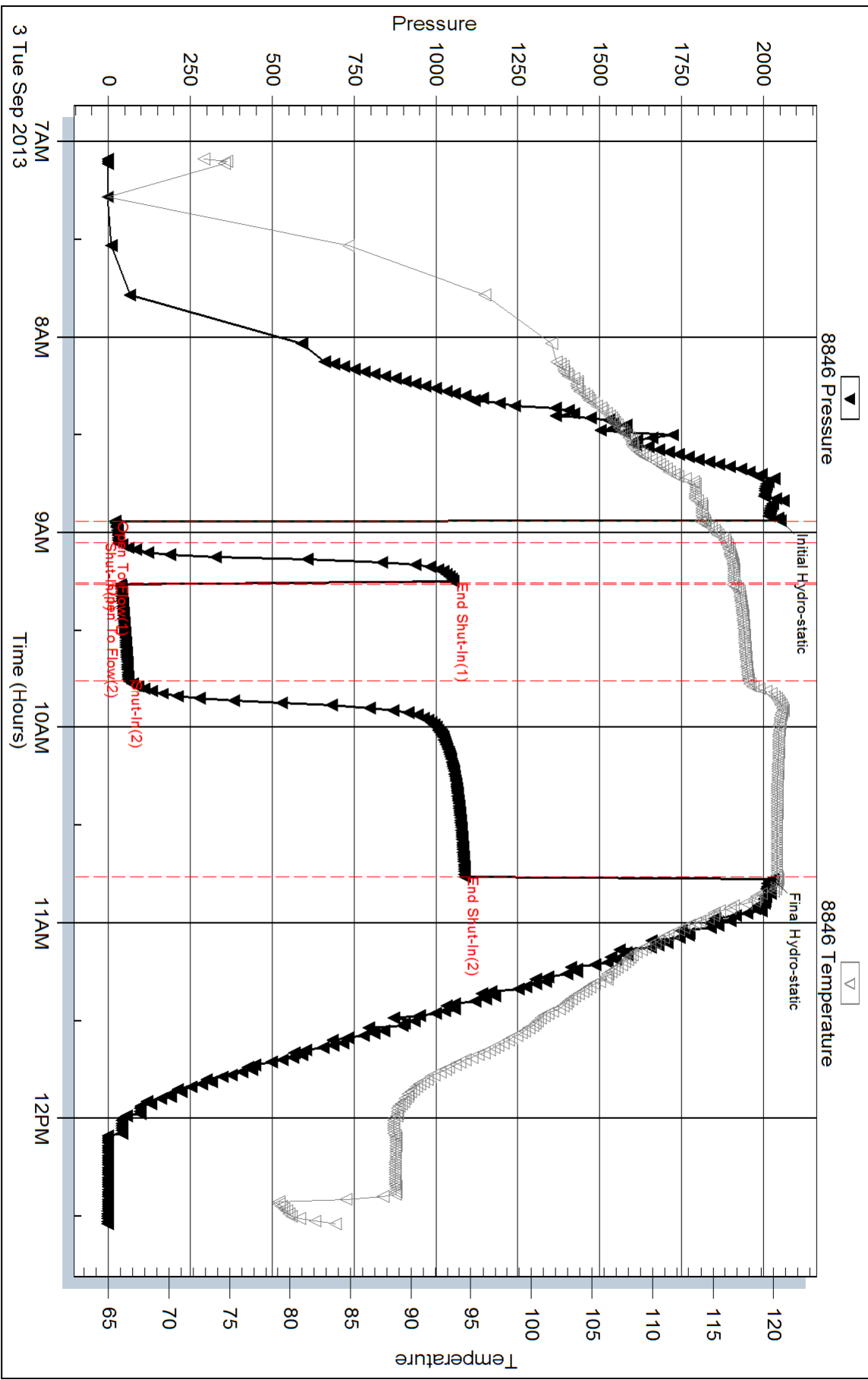
Serial #:

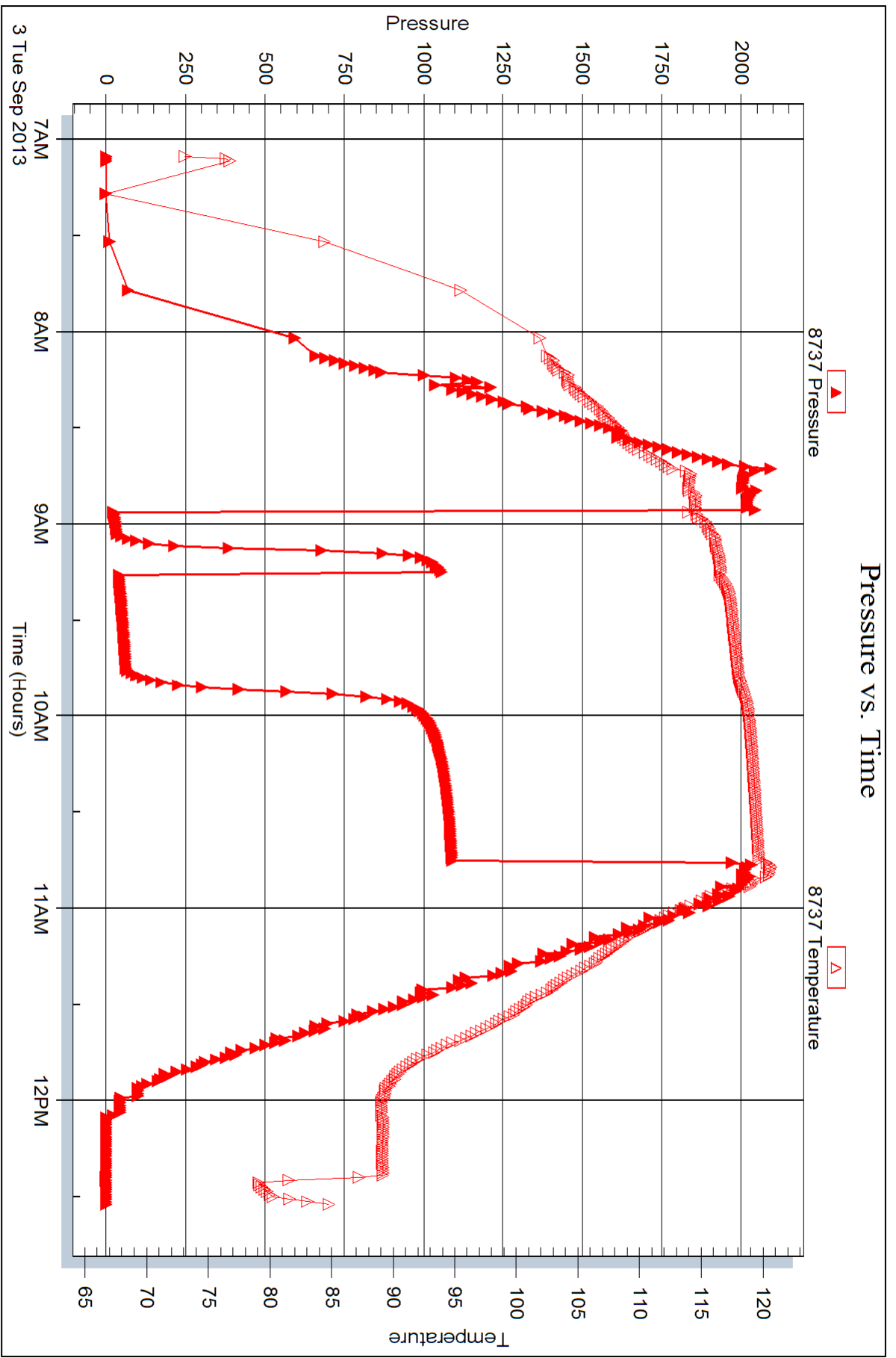
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd
Olmitz KS 67564

ATTN: Vern Schrag

Boomhower "A" 1-16

16-17s-29w Lane,KS

Start Date: 2013.09.03 @ 00:20:15

End Date: 2013.09.03 @ 05:38:00

Job Ticket #: 52911 DST #: 3

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

Printed: 2013.09.10 @ 10:23:14



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52911

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 00:20:15

GENERAL INFORMATION:

Formation: **LKC J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:03:45

Time Test Ended: 05:38:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4185.00 ft (KB) To 4206.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4206.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8846

Outside

Press @ Run Depth: 104.88 psig @ 4186.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.03

End Date:

2013.09.03

Last Calib.:

2013.09.04

Start Time: 00:20:15

End Time:

05:38:00

Time On Btm:

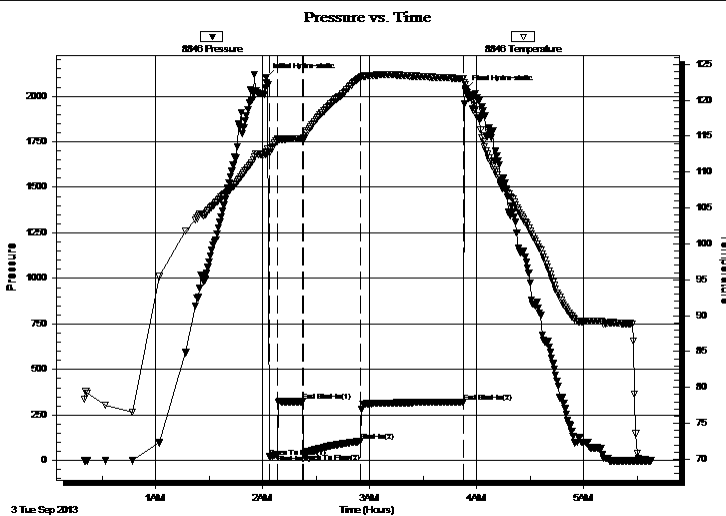
2013.09.03 @ 02:02:00

Time Off Btm:

2013.09.03 @ 03:53:45

TEST COMMENT: IF: Built to 1/2" blow
IS: No return blow
FF: Built to 4" blow
FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2103.13	112.60	Initial Hydro-static
2	19.82	112.62	Open To Flow (1)
7	34.99	114.56	Shut-In(1)
21	323.60	114.69	End Shut-In(1)
21	38.35	114.63	Open To Flow (2)
53	104.88	123.13	Shut-In(2)
111	320.55	122.98	End Shut-In(2)
112	2034.50	122.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
239.00	OCM 3%o 97%m	2.01

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc

562 West State Rd
Olmitt KS 67564

ATTN: Vern Schrag

16-17s-29w Lane,KS

Boomhower "A" 1-16

Job Ticket: 52911

DST#: 3

Test Start: 2013.09.03 @ 00:20:15

GENERAL INFORMATION:

Formation: **LKC J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:03:45

Time Test Ended: 05:38:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4185.00 ft (KB) To 4206.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4206.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8737

Inside

Press @RunDepth: psig @ 4186.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.03

End Date:

2013.09.03

Last Calib.:

2013.09.04

Start Time: 00:20:15

End Time:

05:38:00

Time On Btm:

Time Off Btm:

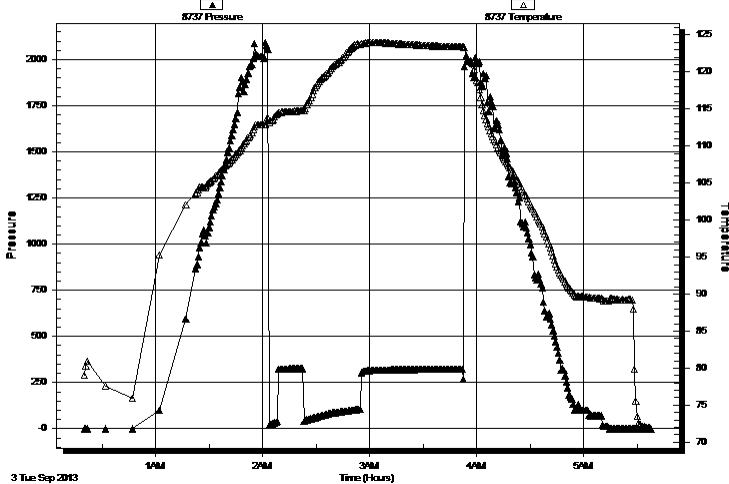
TEST COMMENT: IF: Built to 1/2" blow

IS: No return blow

FF: Built to 4" blow

FS: No return blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
239.00	OCM 3%o 97% m	2.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52911

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 00:20:15

Tool Information

Drill Pipe:	Length: 4044.00 ft	Diameter: 3.80 inches	Volume: 56.73 bbl	Tool Weight: 1500.00 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: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4185.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	49.00 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			4158.00	
Shut In Tool	5.00			4163.00	
Hydraulic tool	5.00			4168.00	
Jars	5.00			4173.00	
Safety Joint	3.00			4176.00	
Packer	5.00			4181.00	28.00 Bottom Of Top Packer
Packer	4.00			4185.00	
Stubb	1.00			4186.00	
Recorder	0.00	8737	Inside	4186.00	
Recorder	0.00	8846	Outside	4186.00	
Perforations	15.00			4201.00	
Bullnose	5.00			4206.00	21.00 Bottom Packers & Anchor

Total Tool Length: 49.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52911

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.03 @ 00:20:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.34 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
239.00	OCM 3%o 97%m	2.013

Total Length: 239.00 ft Total Volume: 2.013 bbl

Num Fluid Samples: 0

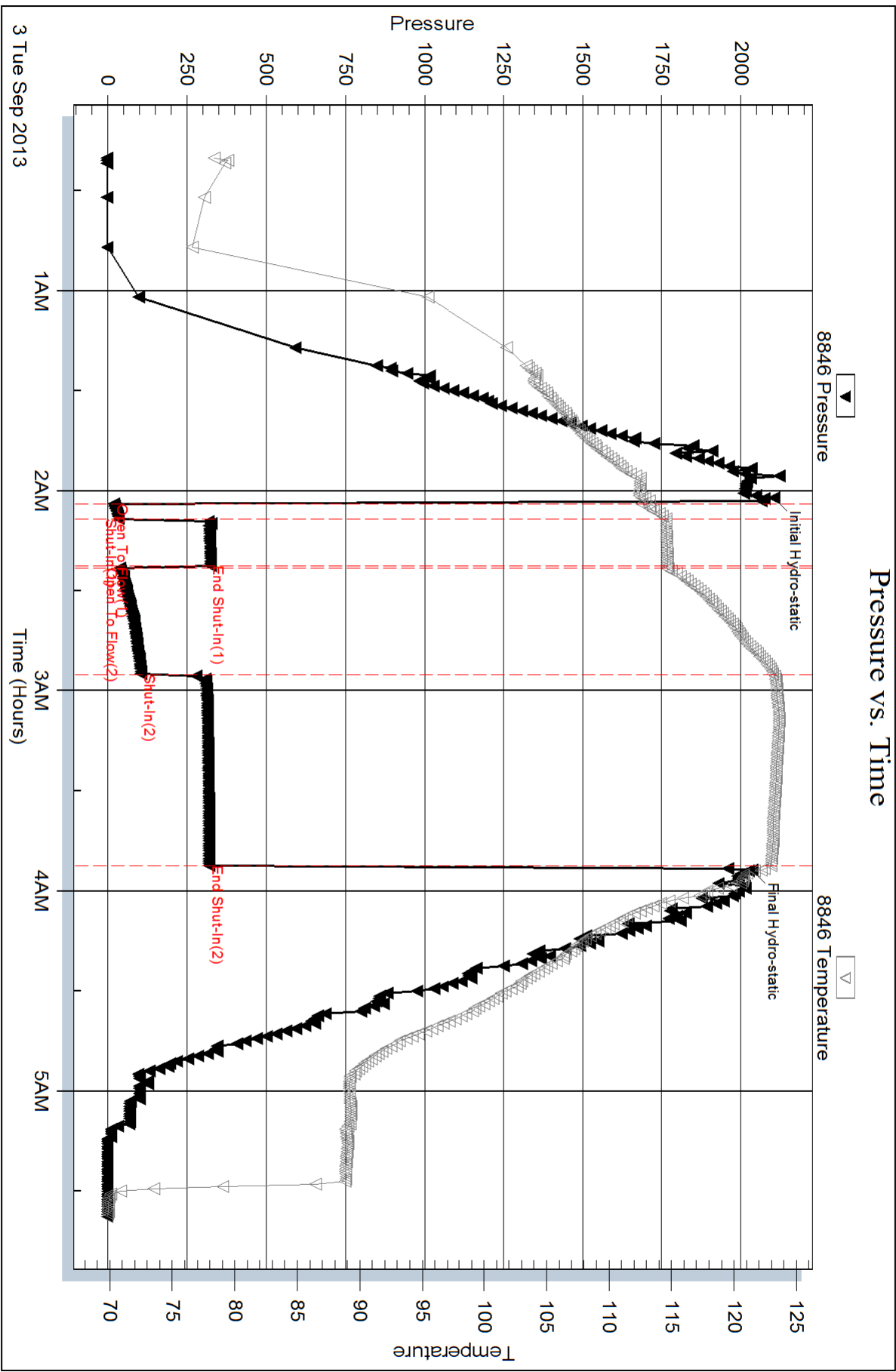
Num Gas Bombs: 0

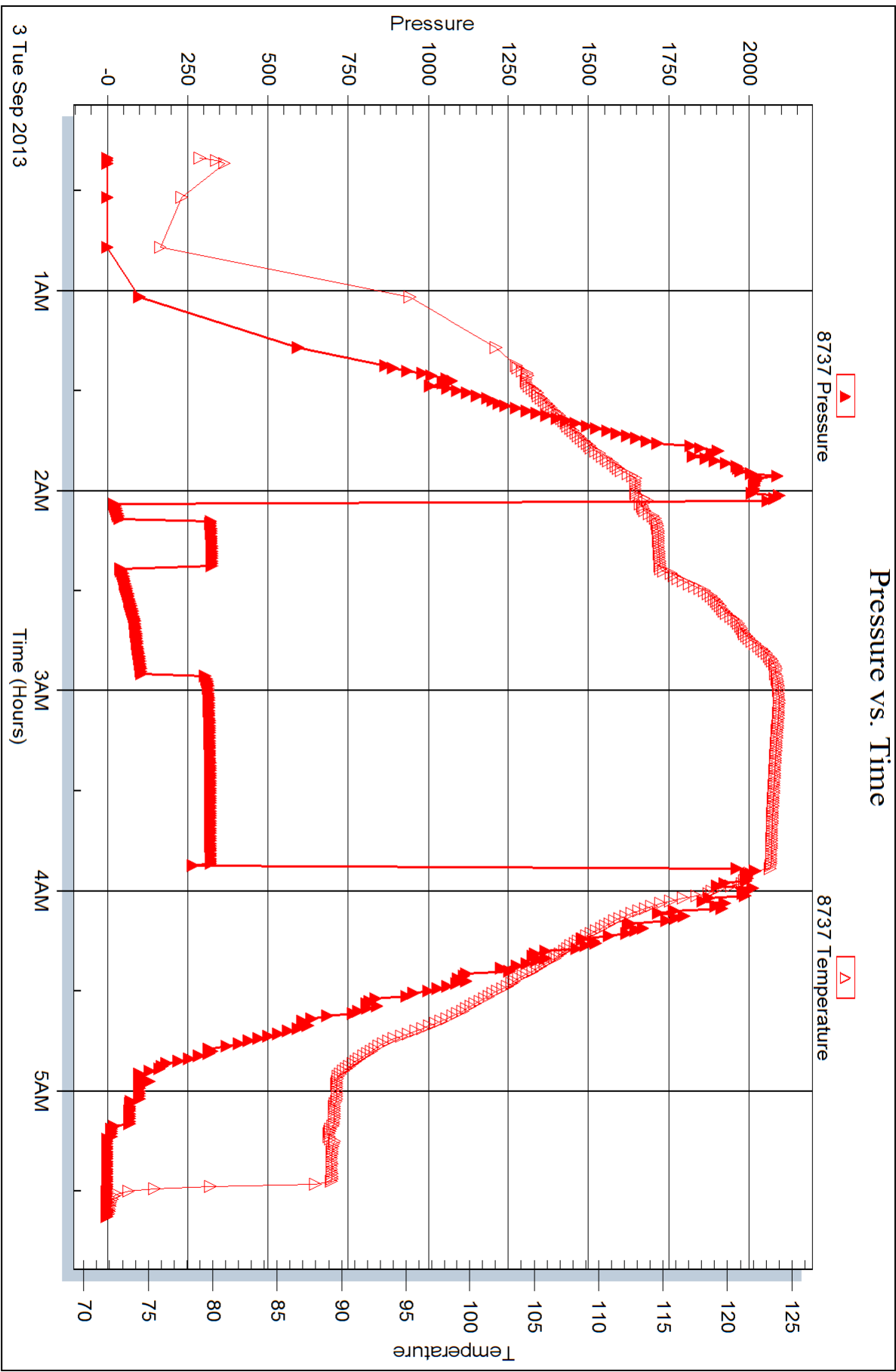
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd
Olmitz KS 67564

ATTN: Vern Schrag

Boomhower "A" 1-16

16-17s-29w Lane,KS

Start Date: 2013.09.04 @ 15:36:15

End Date: 2013.09.04 @ 20:31:30

Job Ticket #: 52912 DST #: 4

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

Printed: 2013.09.10 @ 10:22:45



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52912

DST#: 4

Test Start: 2013.09.04 @ 15:36:15

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:24:15

Time Test Ended: 20:31:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4220.00 ft (KB) To 4236.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4236.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8846** Outside

Press @ Run Depth: 99.63 psig @ 4221.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.04

End Date:

2013.09.04

Last Calib.: 2013.09.04

Start Time: 15:36:15

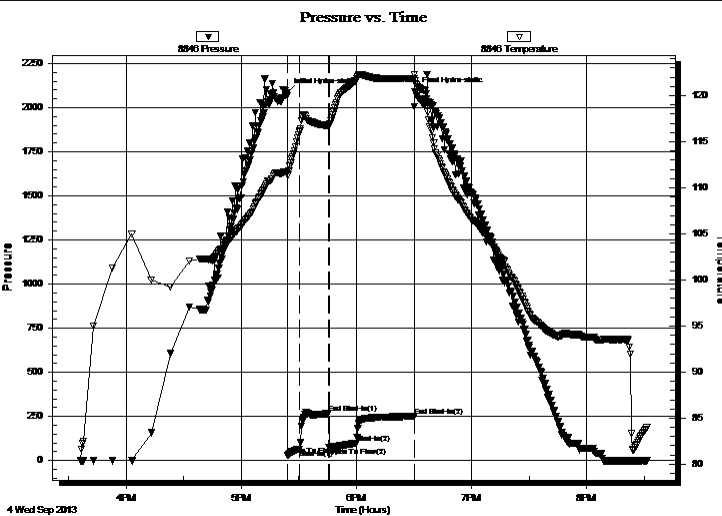
End Time:

20:31:30

Time On Btm: 2013.09.04 @ 17:24:00

Time Off Btm: 2013.09.04 @ 18:30:30

TEST COMMENT: IF: Built to 4" blow
IS: No return blow
FF: BOB in 12 min.
FS: Built to 1" return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2086.08	111.78	Initial Hydro-static
1	28.63	111.35	Open To Flow (1)
7	65.62	116.18	Shut-In(1)
22	266.94	116.76	End Shut-In(1)
22	73.04	116.70	Open To Flow (2)
36	99.63	121.68	Shut-In(2)
66	250.58	121.86	End Shut-In(2)
67	2092.35	121.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
117.00	GCOM 2%g 38%o 60%m	0.58
94.00	Free oil 100%o	1.05
0.00	GIP=92 feet	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52912

DST#: 4

Test Start: 2013.09.04 @ 15:36:15

GENERAL INFORMATION:

Formation: **LKC K**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:24:15
 Time Test Ended: 20:31:30
 Interval: **4220.00 ft (KB) To 4236.00 ft (KB) (TVD)**
 Total Depth: 4236.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2826.00 ft (KB)
 2819.00 ft (CF)
 KB to GR/CF: 7.00 ft

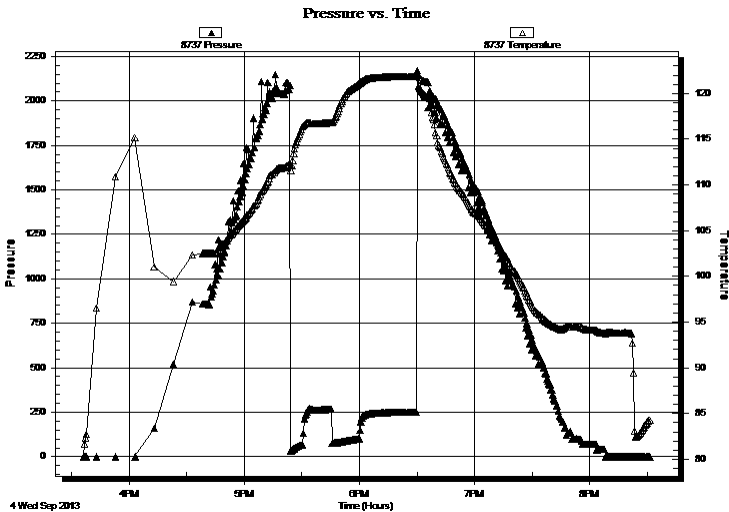
Serial #: 8737

Inside

Press @ Run Depth: psig @ 4221.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.04 End Date: 2013.09.04 Last Calib.: 2013.09.04
 Start Time: 15:36:15 End Time: 20:31:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Built to 4" blow
 IS: No return blow
 FF: BOB in 12 min.
 FS: Built to 1" return blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
117.00	GCOM 2%g 38%o 60%m	0.58
94.00	Free oil 100%o	1.05
0.00	GIP=92 feet	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52912

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.04 @ 15:36:15

Tool Information

Drill Pipe:	Length: 4074.00 ft	Diameter: 3.80 inches	Volume: 57.15 bbl	Tool Weight: 1500.00 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: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.87 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4220.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	44.00 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			4193.00	
Shut In Tool	5.00			4198.00	
Hydraulic tool	5.00			4203.00	
Jars	5.00			4208.00	
Safety Joint	3.00			4211.00	
Packer	5.00			4216.00	28.00 Bottom Of Top Packer
Packer	4.00			4220.00	
Stubb	1.00			4221.00	
Recorder	0.00	8737	Inside	4221.00	
Recorder	0.00	8846	Outside	4221.00	
Perforations	10.00			4231.00	
Bullnose	5.00			4236.00	16.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52912

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.04 @ 15:36:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.75 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
117.00	GCOM 2%g 38%o 60%m	0.575
94.00	Free oil 100%o	1.045
0.00	GIP=92 feet	0.000

Total Length: 211.00 ft Total Volume: 1.620 bbl

Num Fluid Samples: 0

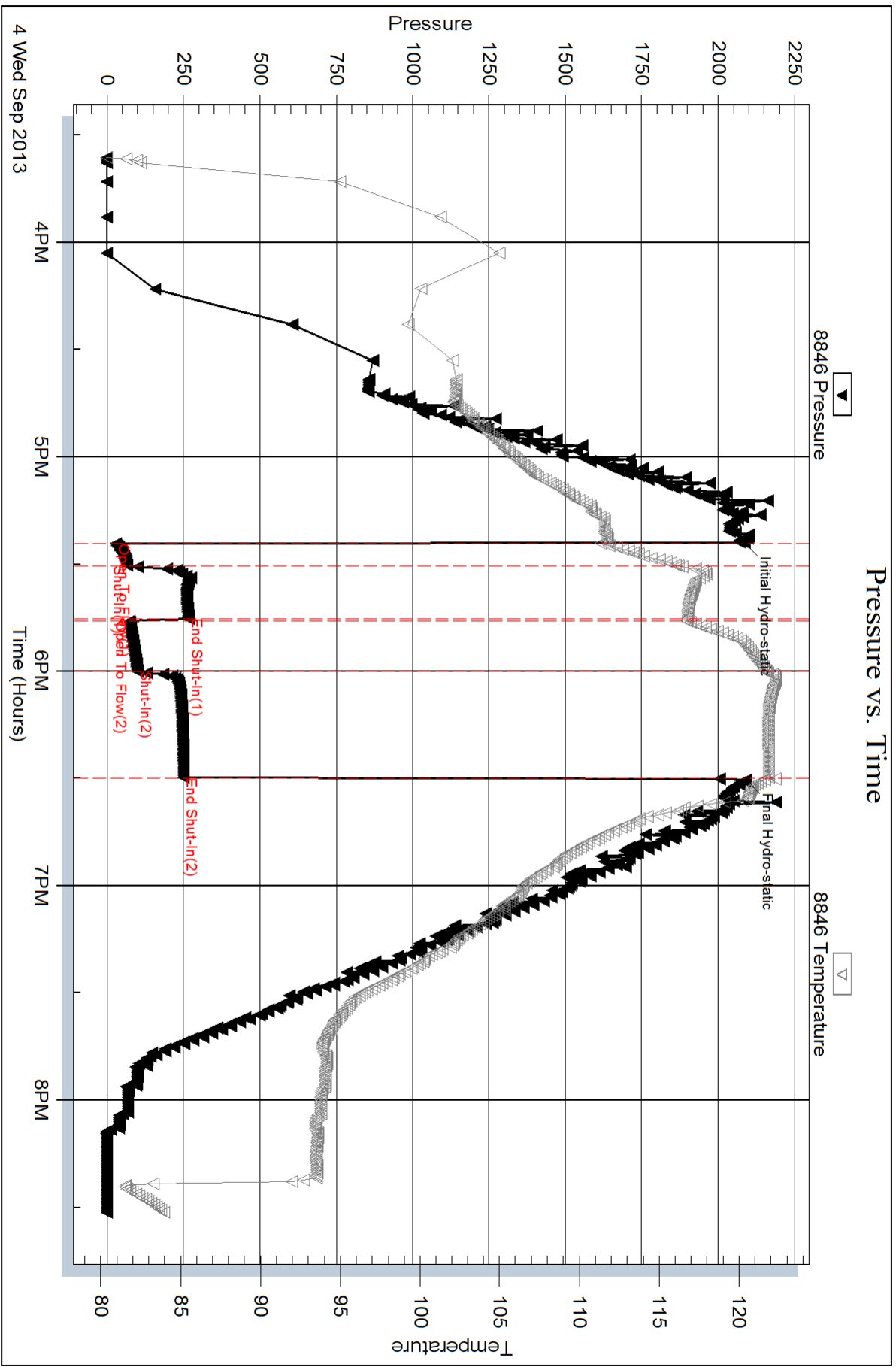
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API= 31 @90 corrected to 28 @ 60



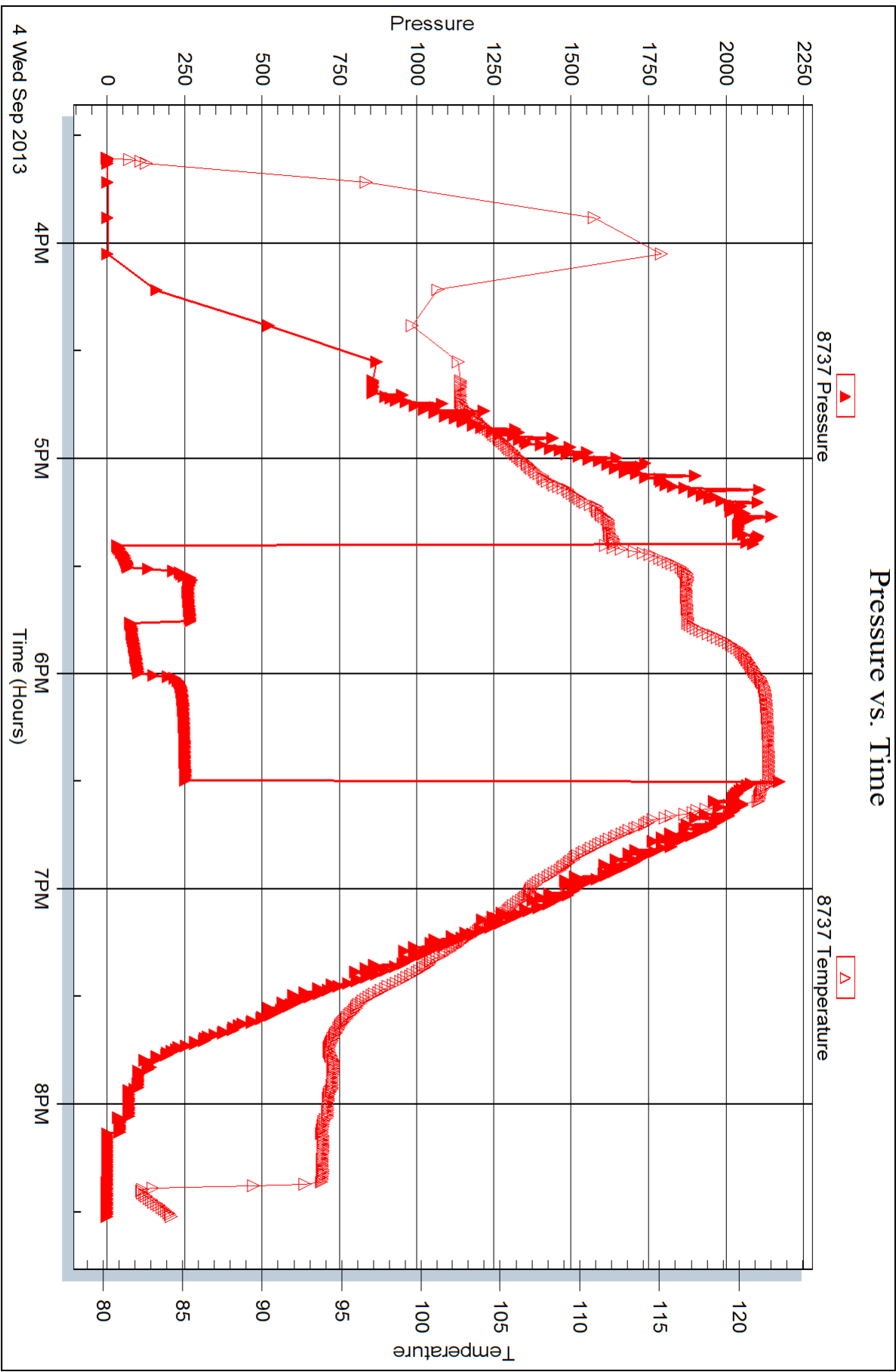
Serial #: 8737

Inside

Larson Engineering Inc

Boorhower "A" 1-16

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd
Olmitz KS 67564

ATTN: Vern Schrag

Boomhower "A" 1-16

16-17s-29w Lane,KS

Start Date: 2013.09.05 @ 08:30:15

End Date: 2013.09.05 @ 13:48:30

Job Ticket #: 52913 DST #: 5

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

Printed: 2013.09.10 @ 10:21:50



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52913

DST#: 5

Test Start: 2013.09.05 @ 08:30:15

GENERAL INFORMATION:

Formation: **LKC L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:45:15

Time Test Ended: 13:48:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4259.00 ft (KB) To 4275.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4275.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8846** Outside

Press @ Run Depth: 16.41 psig @ 4260.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.05 End Date: 2013.09.05

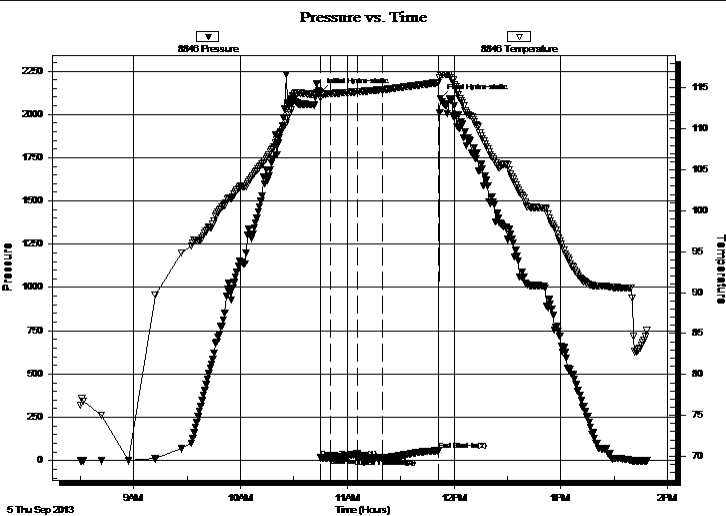
Last Calib.: 2013.09.05

Start Time: 08:30:15 End Time: 13:48:30

Time On Btm: 2013.09.05 @ 10:45:00

Time Off Btm: 2013.09.05 @ 11:52:30

TEST COMMENT: IF:Weak surface
IS:No return blow
FF:No blow
FS:No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2125.74	114.35	Initial Hydro-static
1	16.12	113.81	Open To Flow (1)
6	16.76	114.32	Shut-In(1)
21	38.85	114.54	End Shut-In(1)
21	15.29	114.53	Open To Flow (2)
35	16.41	114.81	Shut-In(2)
67	57.30	115.68	End Shut-In(2)
68	2089.41	116.59	Final Hydro-static

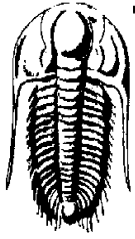
Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud w ith oil spots	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52913

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.05 @ 08:30:15

GENERAL INFORMATION:

Formation: **LKC L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:45:15

Time Test Ended: 13:48:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4259.00 ft (KB) To 4275.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4275.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8737 Inside

Press @ Run Depth: psig @ 4260.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.05 End Date: 2013.09.05

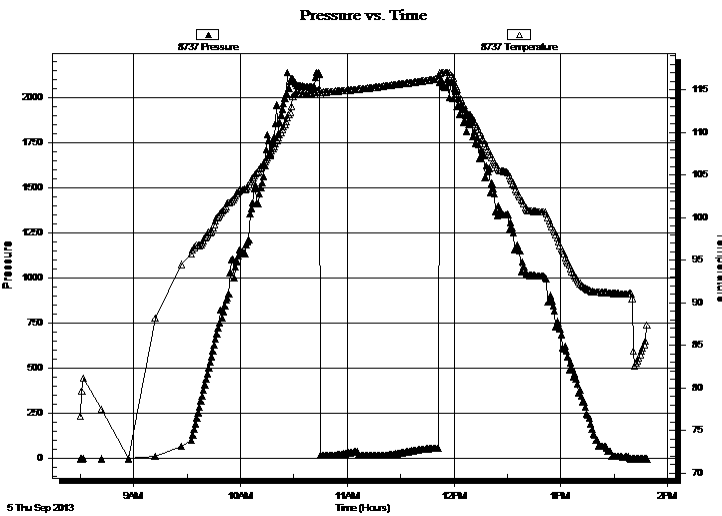
Last Calib.: 2013.09.05

Start Time: 08:30:15 End Time: 13:48:30

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Weak surface
IS: No return blow
FF: No blow
FS: No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud w ith oil spots	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52913

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.05 @ 08:30:15

Tool Information

Drill Pipe:	Length: 4106.00 ft	Diameter: 3.80 inches	Volume: 57.60 bbl	Tool Weight: 1500.00 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: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4259.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	44.00 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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Change Over Sub	1.00			4232.00	
Shut In Tool	5.00			4237.00	
Hydraulic tool	5.00			4242.00	
Jars	5.00			4247.00	
Safety Joint	3.00			4250.00	
Packer	5.00			4255.00	28.00 Bottom Of Top Packer
Packer	4.00			4259.00	
Stubb	1.00			4260.00	
Recorder	0.00	8737	Inside	4260.00	
Recorder	0.00	8846	Outside	4260.00	
Perforations	10.00			4270.00	
Bullnose	5.00			4275.00	16.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52913

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.05 @ 08:30:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.75 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud w ith oil spots	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

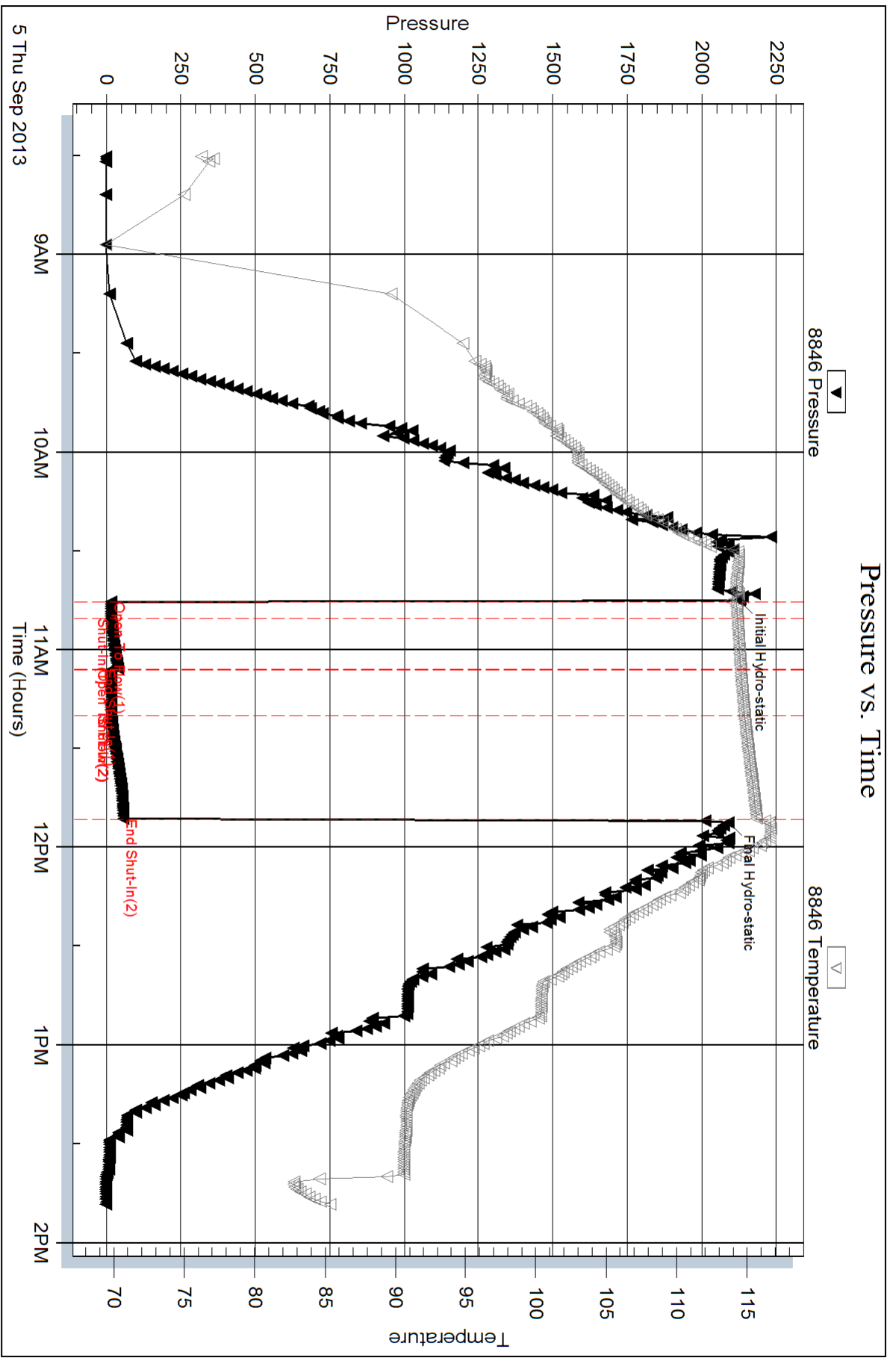
Num Gas Bombs: 0

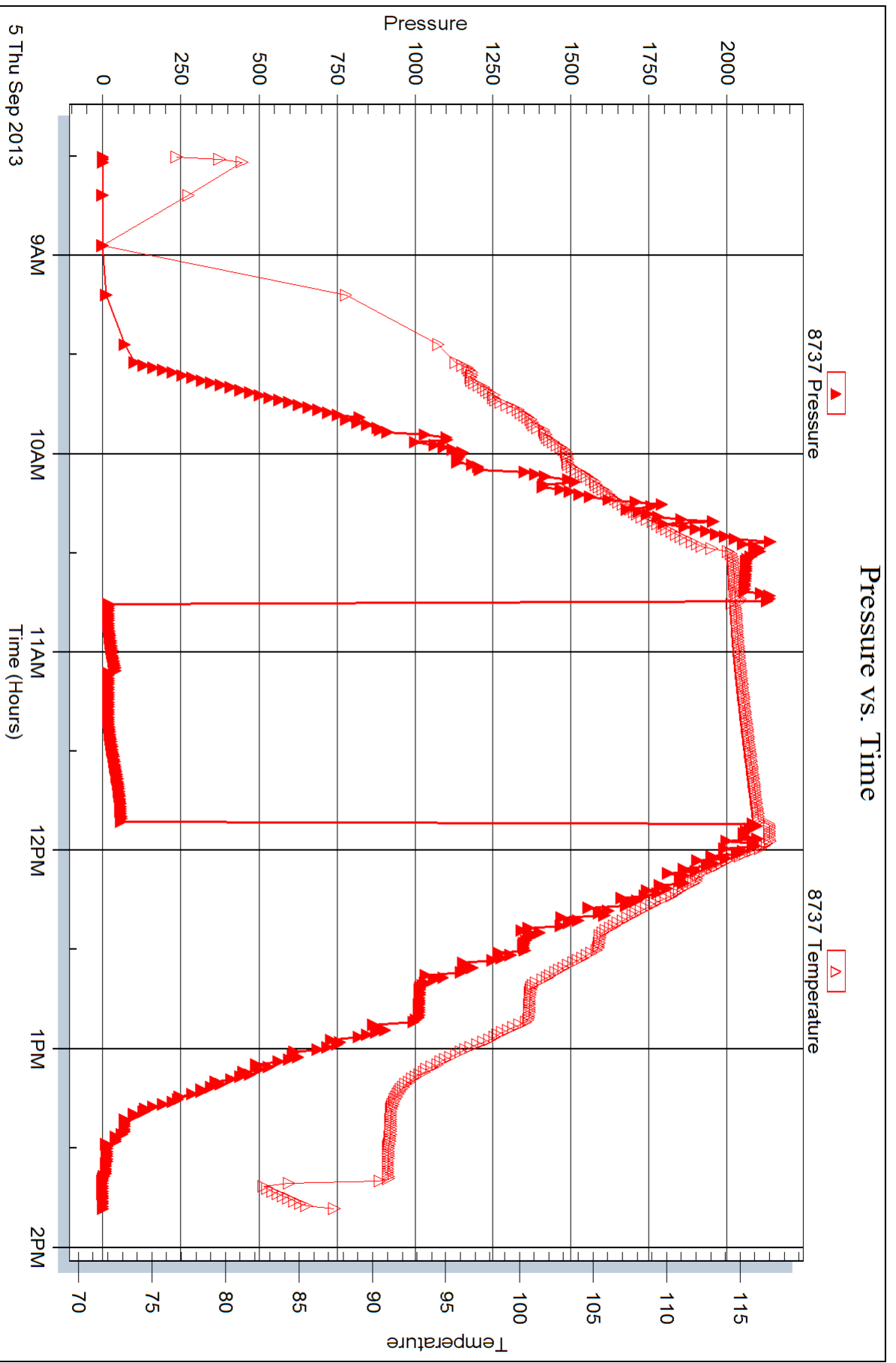
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd
Olmitz KS 67564

ATTN: Vern Schrag

Boomhower "A" 1-16

16-17s-29w Lane,KS

Start Date: 2013.09.06 @ 20:15:15

End Date: 2013.09.07 @ 01:07:15

Job Ticket #: 52914 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.09.10 @ 10:20:35



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52914

DST#: 6

Test Start: 2013.09.06 @ 20:15:15

GENERAL INFORMATION:

Formation: **Pawnee Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:12:45

Time Test Ended: 01:07:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4418.00 ft (KB) To 4500.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8846**

Inside

Press @ Run Depth: 56.70 psig @ 4419.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.06

End Date:

2013.09.07

Last Calib.: 2013.09.07

Start Time: 20:15:15

End Time:

01:07:15

Time On Btm: 2013.09.06 @ 22:12:30

Time Off Btm: 2013.09.06 @ 23:21:00

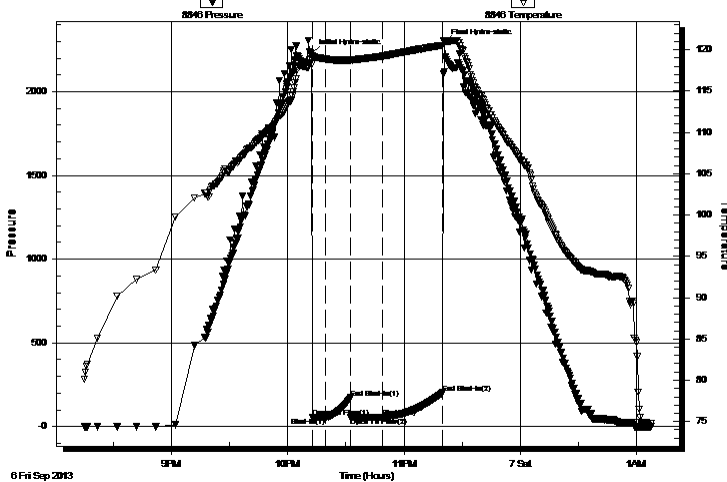
TEST COMMENT: IF: Built to weak surface blow

IS: No return blow

FF: No blow

FS: No return blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2227.65	119.31	Initial Hydro-static
1	55.50	118.40	Open To Flow (1)
7	55.64	118.87	Shut-In(1)
20	171.43	118.78	End Shut-In(1)
20	55.68	118.72	Open To Flow (2)
37	56.70	119.24	Shut-In(2)
68	201.50	120.55	End Shut-In(2)
69	2289.91	121.09	Final Hydro-static

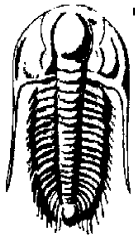
Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud with oil spots	0.02

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52914

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.06 @ 20:15:15

GENERAL INFORMATION:

Formation: **Pawnee Ft. Scott**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 22:12:45

Tester: Mike Roberts

Time Test Ended: 01:07:15

Unit No: 65

Interval: 4418.00 ft (KB) To 4500.00 ft (KB) (TVD)

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8737 Outside

Press@RunDepth: psig @ 4419.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.06 End Date: 2013.09.07

Last Calib.: 2013.09.07

Start Time: 20:15:15 End Time: 01:07:30

Time On Btm:

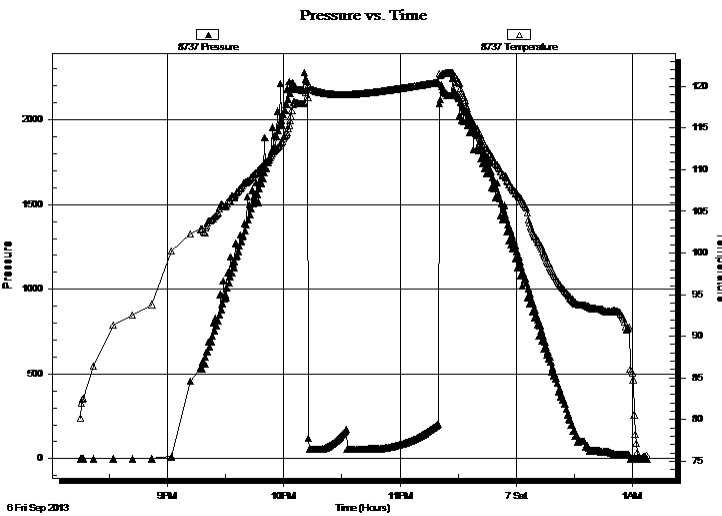
Time Off Btm:

TEST COMMENT: IF: Built to weak surface blow

IS: No return blow

FF: No blow

FS: No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud w ith oil spots	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

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52914

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.06 @ 20:15:15

Tool Information

Drill Pipe:	Length: 4261.00 ft	Diameter: 3.80 inches	Volume: 59.77 bbl	Tool Weight: 1500.00 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: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4418.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	82.00 ft			
Tool Length:	111.00 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			4390.00	
Shut In Tool	5.00			4395.00	
Hydraulic tool	5.00			4400.00	
Jars	5.00			4405.00	
Safety Joint	3.00			4408.00	
Packer	5.00			4413.00	29.00 Bottom Of Top Packer
Packer	5.00			4418.00	
Stubb	1.00			4419.00	
Recorder	0.00	8846	Inside	4419.00	
Recorder	0.00	8737	Outside	4419.00	
Perforations	6.00			4425.00	
Change Over Sub	1.00			4426.00	
Drill Pipe	63.00			4489.00	
Change Over Sub	1.00			4490.00	
Perforations	5.00			4495.00	
Bullnose	5.00			4500.00	82.00 Bottom Packers & Anchor
Total Tool Length:	111.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52914

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.06 @ 20:15:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.36 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud w ith oil spots	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

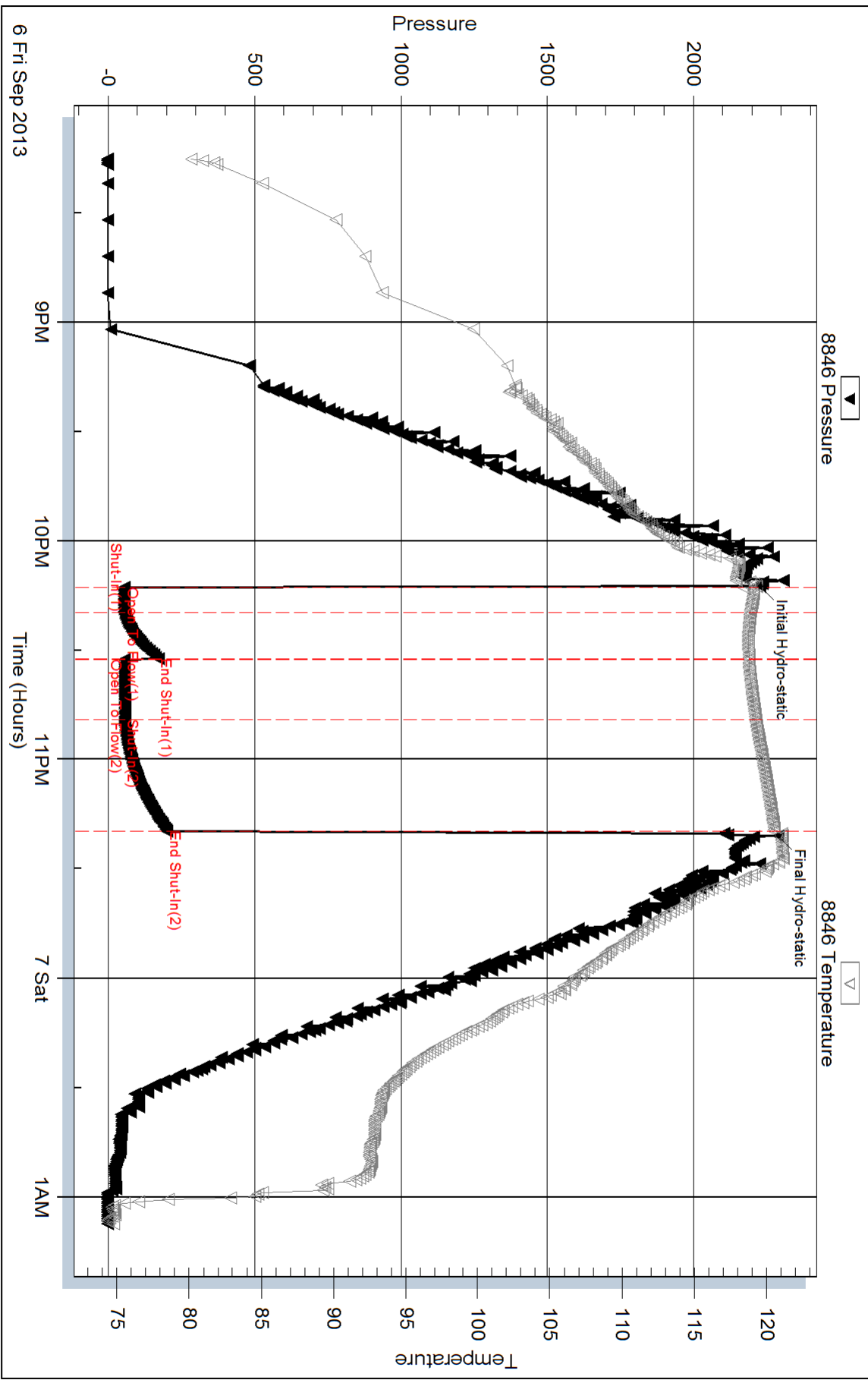
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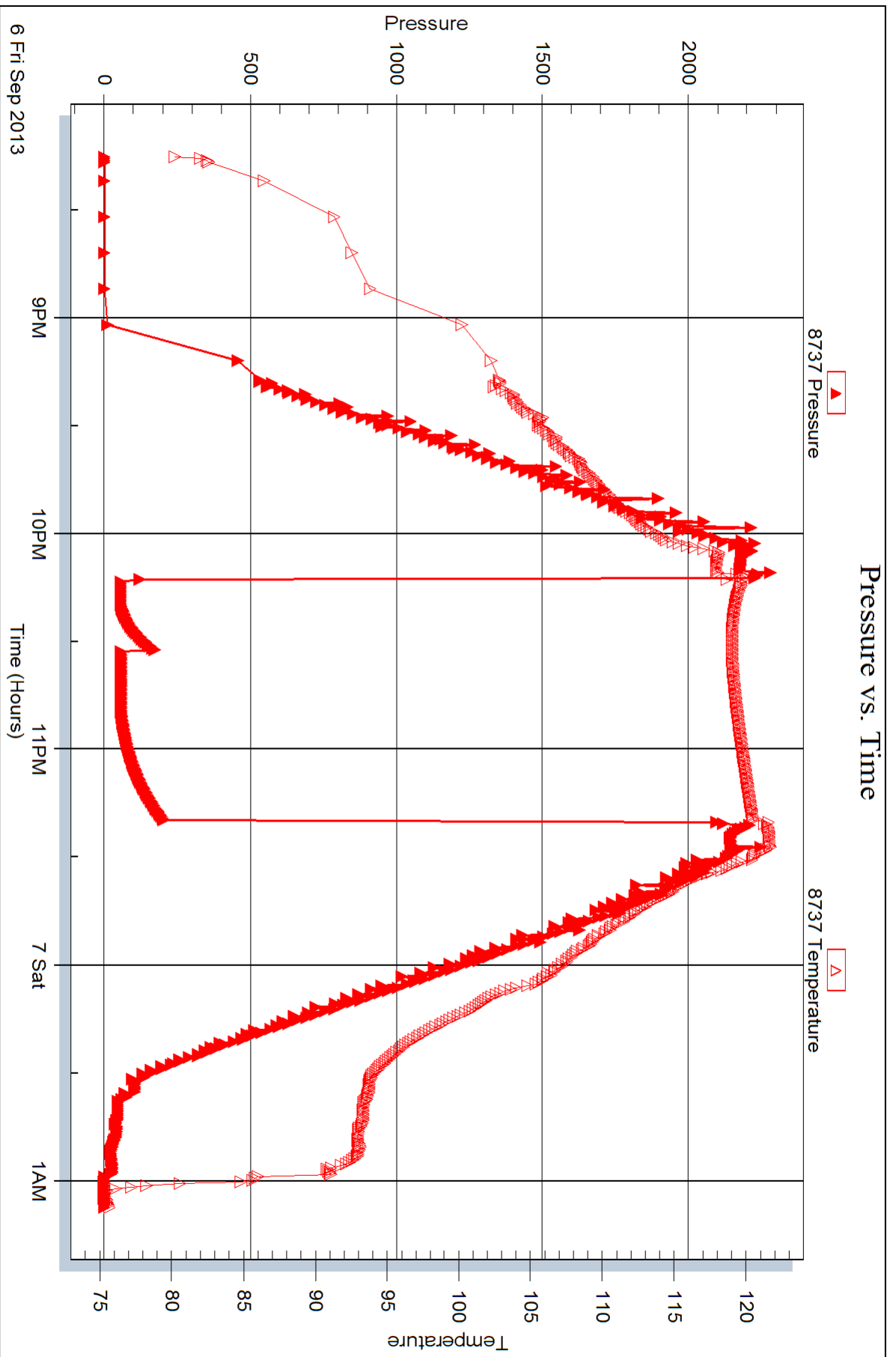
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc**

562 West State Rd
Olmitz KS 67564

ATTN: Vern Schrag

Boomhower "A" 1-16

16-17s-29w Lane,KS

Start Date: 2013.09.07 @ 13:05:00

End Date: 2013.09.07 @ 19:07:45

Job Ticket #: 52915 DST #: 7

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

Printed: 2013.09.10 @ 10:20:04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc

16-17s-29w Lane, KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

ATTN: Vern Schrag

Job Ticket: 52915

DST#: 7

Test Start: 2013.09.07 @ 13:05:00

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:18:45

Time Test Ended: 19:07:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4497.00 ft (KB) To 4560.00 ft (KB) (TVD)**

Reference Elevations: 2826.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

2819.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **8846** Inside

Press @ Run Depth: 87.67 psig @ 4498.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.07

End Date: 2013.09.07

Last Calib.: 2013.09.07

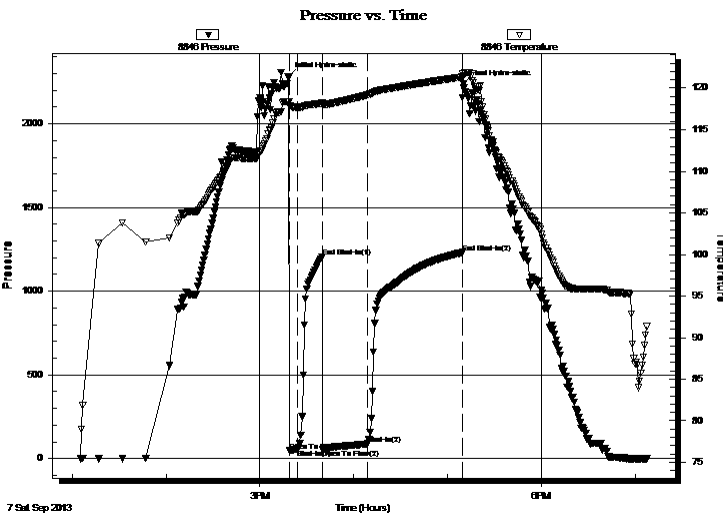
Start Time: 13:05:15

End Time: 19:07:45

Time On Btm: 2013.09.07 @ 15:18:30

Time Off Btm: 2013.09.07 @ 17:10:15

TEST COMMENT: IF: Built to 2" blow
IS: No return blow
FF: BOB in 20 min.
FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2279.97	118.37	Initial Hydro-static
1	46.14	117.87	Open To Flow (1)
6	56.65	117.66	Shut-In(1)
22	1206.50	118.20	End Shut-In(1)
22	57.30	117.99	Open To Flow (2)
51	87.67	119.17	Shut-In(2)
111	1231.16	121.35	End Shut-In(2)
112	2237.00	121.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
147.00	gcom 5%g 15%o 80%m	0.72
30.00	free oil 100% o	0.42
0.00	GIP= 216 feet	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc
 562 West State Rd
 Olmitz KS 67564
 ATTN: Vern Schrag

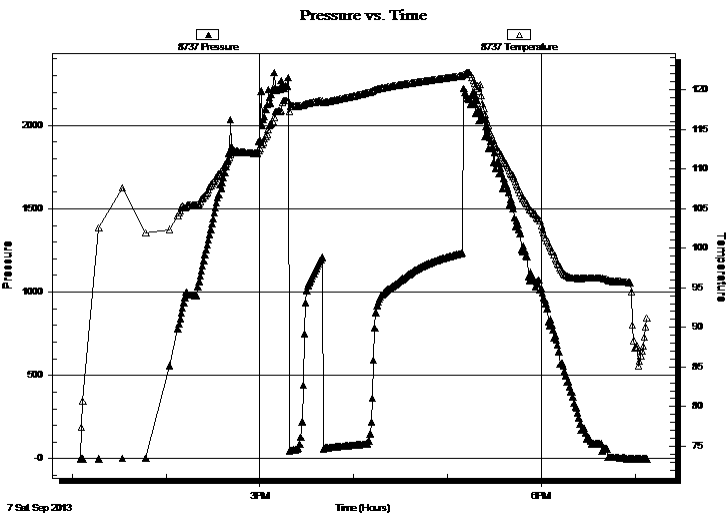
16-17s-29w Lane, KS
Boomhower "A" 1-16
 Job Ticket: 52915 **DST#: 7**
 Test Start: 2013.09.07 @ 13:05:00

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 15:18:45 Tester: Mike Roberts
 Time Test Ended: 19:07:45 Unit No: 65
Interval: 4497.00 ft (KB) To 4560.00 ft (KB) (TVD) Reference Elevations: 2826.00 ft (KB)
 Total Depth: 4560.00 ft (KB) (TVD) 2819.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

Serial #: 8737 Outside
 Press @ Run Depth: psig @ 4498.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.07 End Date: 2013.09.07 Last Calib.: 2013.09.07
 Start Time: 13:05:15 End Time: 19:07:45 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Built to 2" blow
 IS: No return blow
 FF: BOB in 20 min.
 FS: No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
147.00	gcom 5%g 15%o 80%m	0.72
30.00	free oil 100% o	0.42
0.00	GIP= 216 feet	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

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52915

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.07 @ 13:05:00

Tool Information

Drill Pipe:	Length: 4330.00 ft	Diameter: 3.80 inches	Volume: 60.74 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	2500.00 lb
Drill Collar:	Length: 147.00 ft	Diameter: 2.25 inches	Volume: 0.72 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 61.46 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4497.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	63.00 ft				
Tool Length:	92.00 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			4469.00	
Shut In Tool	5.00			4474.00	
Hydraulic tool	5.00			4479.00	
Jars	5.00			4484.00	
Safety Joint	3.00			4487.00	
Packer	5.00			4492.00	29.00 Bottom Of Top Packer
Packer	5.00			4497.00	
Stubb	1.00			4498.00	
Recorder	0.00	8846	Inside	4498.00	
Recorder	0.00	8737	Outside	4498.00	
Perforations	5.00			4503.00	
Change Over Sub	1.00			4504.00	
Drill Pipe	31.00			4535.00	
Change Over Sub	1.00			4536.00	
Perforations	19.00			4555.00	
Bullnose	5.00			4560.00	63.00 Bottom Packers & Anchor
Total Tool Length:	92.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc

16-17s-29w Lane,KS

562 West State Rd
Olmitz KS 67564

Boomhower "A" 1-16

Job Ticket: 52915

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.07 @ 13:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
147.00	gcom 5%g 15%o 80%m	0.723
30.00	free oil 100% o	0.421
0.00	GIP= 216 feet	0.000

Total Length: 177.00 ft Total Volume: 1.144 bbl

Num Fluid Samples: 0

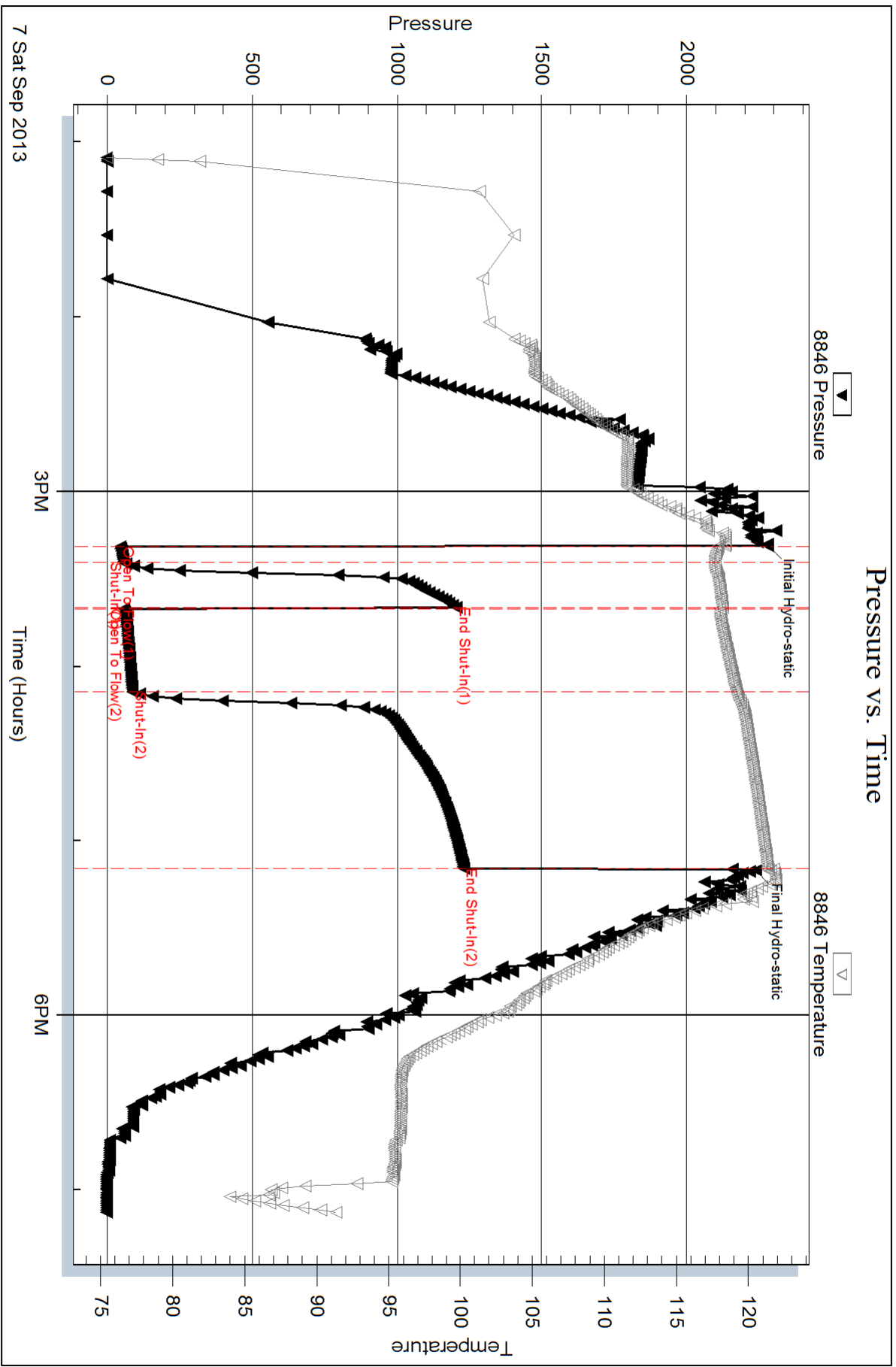
Num Gas Bombs: 0

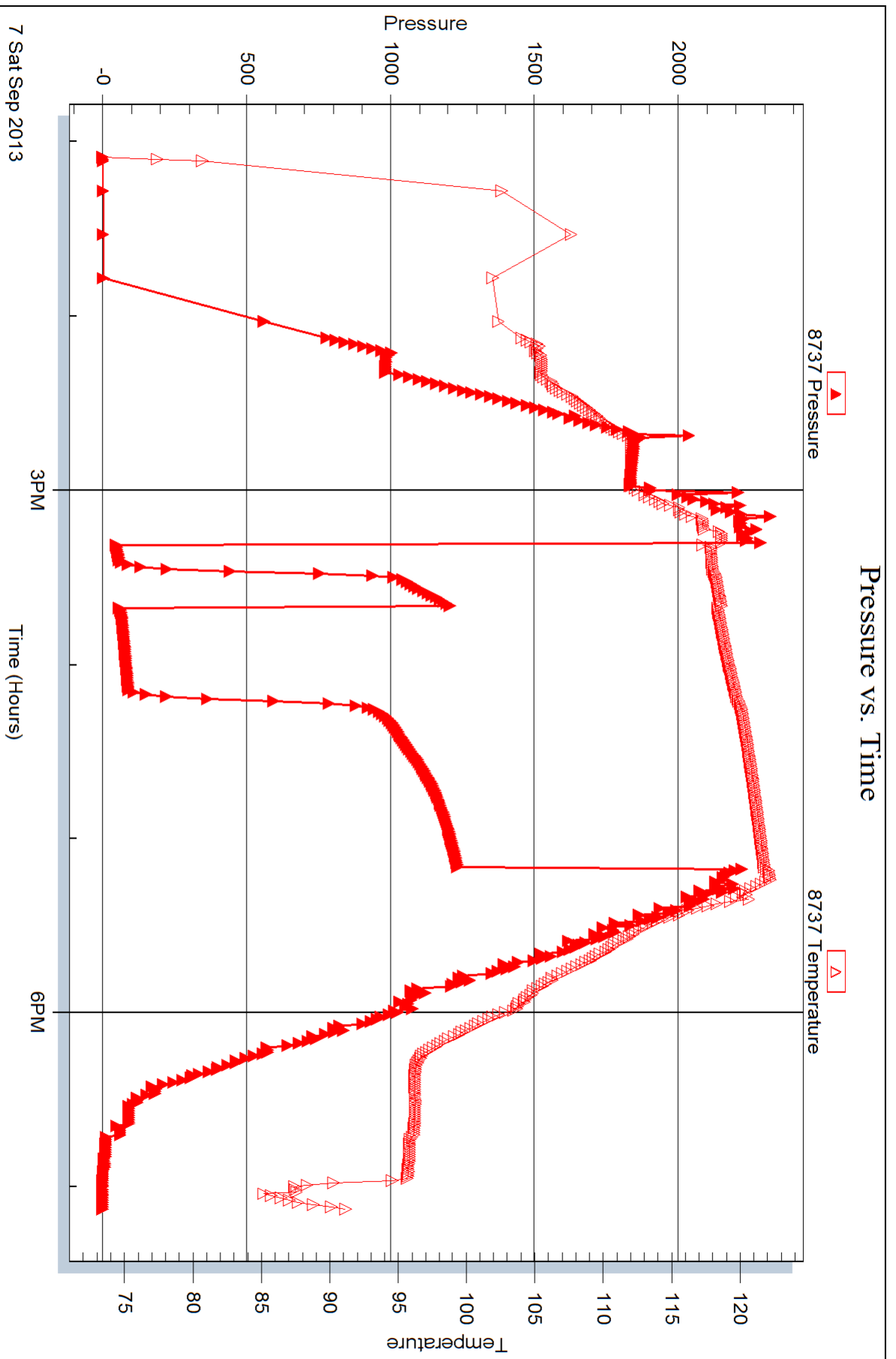
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API= 41 @ 100 corrected to 37 @ 60







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

00

NO. 52909

Well Name & No. Boomer 'A' 1-16 Test No. 1 Date 9-2-13
 Company Larson Engineering Inc Elevation 2826 KB 2819 GL
 Address 562 W State Rd 4 Omitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD # 2
 Location: Sec. 16 Twp. 17s Rge. 29w Co. Lane State KS

Interval Tested 4035-4051 Zone Tested Kansing E
 Anchor Length 16 Drill Pipe Run 3857 Mud Wt. 9.0
 Top Packer Depth 4031 Drill Collars Run ~~715~~ 147 Vis 59
 Bottom Packer Depth 4035 Wt. Pipe Run Ø WL 8.0
 Total Depth 4051 Chlorides 1200 ppm System LCM 1
 Blow Description IF: Built to 1" Blow
FS: No Return Blows
FF: Built to 2 1/2 Blow
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
117	GIP = 692'	100			
117		5	35		60
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 117 BHT 118 Gravity — API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 1992 Test 1250 T-On Location 06:50
 (B) First Initial Flow 18 Jars 250 T-Started 07:38
 (C) First Final Flow 28 Safety Joint 75 NC T-Open 09:50
 (D) Initial Shut-In 939 Circ Sub T-Pulled 11:40
 (E) Second Initial Flow 30 Hourly Standby T-Out 13:30
 (F) Second Final Flow 51 Mileage 64RT 99.20 Comments _____
 (G) Final Shut-In 998 Sampler _____
 (H) Final Hydrostatic 2008 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Sub Total 0
 Total 1674.20
 MP/DST Disc't _____
 Sub Total 1674.20

Approved By Vern Schrag Our Representative Mike Roberts
 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 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. 52910

Well Name & No. Boombower "A" 1-16 Test No. 2 Date 9-3-13
 Company Larson Engineering Inc Elevation 2826 KB 2819 GI.
 Address 562 W. State Rd. #4 Olmitz KS 67564
 Co. Rep / Geo. Vein Schrag Rig HD #2
 Location: Sec. 16 Twp. 172 Rge. 29W Co. LANE State KS

Interval Tested 4130 - 4155 Zone Tested H
 Anchor Length 25 Drill Pipe Run 3970 Mud Wt. 9.1
 Top Packer Depth 4126 Drill Collars Run 147 Vis 52
 Bottom Packer Depth 4130 Wt. Pipe Run φ WL 6.8
 Total Depth 4155 Chlorides 1600 ppm System LCM 1
 Blow Description IF: Built to 1" Blow
IS: No Return Blow
FF: BOB in 29 Min
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
117	Feet of <u>GIP = 62'</u>	100			
117	Feet of <u>gcmo</u>	20	40		40
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 117 BHT 120 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2052</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>06:35</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>07:05</u>
(C) First Final Flow <u>31</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>08:55</u>
(D) Initial Shut-In <u>1055</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>10:45</u>
(E) Second Initial Flow <u>37</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>12:32</u>
(F) Second Final Flow <u>60</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments
(G) Final Shut-In <u>1088</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2030</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60

Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

Sub Total 1674.20
 Total 1674.20
 MP/DST Disc't

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52911 9-4

Well Name & No. Boomer "A" 1-16 Test No. 3 Date 9-3-13
 Company Larson Engineering Inc. Elevation 2826 KB 2819 GL
 Address 562 W. State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig H0 #2
 Location: Soc. 16 Twp. 17S Rge. 29W Co. LANE State KS

Interval Tested 4185-4206 Zone Tested J
 Anchor Length 21 Drill Pipe Run 4044 Mud Wt. 9.2
 Top Packer Depth 4184 Drill Collars Run 147 Vis 67
 Bottom Packer Depth 4185 Wt. Pipe Run 0 WL 6.4
 Total Depth 4206 Chlorides 1700 ppm System LCM 1
 Blow Description IF: Built to 1/2" Blow
IS: No Return Blow
FF: Built to 4" Blow
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>239</u>	<u>OCM</u>	<u>3</u>		<u>97</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 239 BHT 123 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2103</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>23:30</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:20</u>
(C) First Final Flow <u>34</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>02:03</u>
(D) Initial Shut-In <u>323</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>03:53 03:53</u>
(E) Second Initial Flow <u>38</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>05:38</u>
(F) Second Final Flow <u>104</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments
(G) Final Shut-In <u>320</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2034</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby	Total <u>1674.20</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60

Sub Total 1674.20

Approved By Jessie Schrag Our Representative Mike Ralston

Trilobite Testing Inc. shall not be liable for damaged or destroyed property of 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, to the extent that such loss or damage 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. 52912

Well Name & No. Boomhower "A" 1-16 Test No. 4 Date 9-4-13
 Company Larson Engineering Inc. Elevation 2826 KB 2819 GL
 Address 562 W. State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HO 2
 Location: Sec. 16 Twp. 17S Rge. 29W Co. Lane State KS

Interval Tested 4220-4236 Zone Tested K
 Anchor Length 16 Drill Pipe Run 4074 Mud Wt. 9.1
 Top Packer Depth 4216 Drill Collars Run 147 Vis 63
 Bottom Packer Depth 4220 Wt. Pipe Run 0 WL 6.8
 Total Depth 4236 Chlorides 1800 ppm System LCM 1

Blow Description IF: Built to 4" Blow
IS: No Return Blow
FF: BOB in 12 Min
FS: ~~No Return Blow~~ Built to 1" Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
	<u>92' GIP</u>	<u>100</u>			
<u>94</u>	<u>Free Oil</u>		<u>100</u>		
117	<u>geom</u>	<u>2</u>	<u>38</u>		<u>60</u>

Rec Total ~~211~~ 211 BHT 122 Gravity 28 API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2086</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>15:00</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>15:36</u>
(C) First Final Flow <u>65</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>17:24</u>
(D) Initial Shut-In <u>266</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>17:30 18:30</u>
(E) Second Initial Flow <u>73</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>20:31</u>
(F) Second Final Flow <u>99</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments
(G) Final Shut-In <u>250</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2092</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5 Shale Packer
 Initial Shut-In 15 Extra Packer
 Final Flow 15 Extra Recorder
 Final Shut-In 30 Day Standby
 Accessibility
 Sub Total 1674.20 MP/DST Disc't

Approved By Daniel Kelly Our Representative Mike Roberts
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52913

Well Name & No. Boomer "A" 1-16 Test No. 5 Date 9-5-13
 Company Larson Engineering Inc. Elevation 2826 KB 2819 GL
 Address 562 W. State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 16 Twp. 17S Rge. 29W Co. ~~SEFF~~ LANE State KS

Interval Tested 4259-4275 Zone Tested L
 Anchor Length 16 Drill Pipe Run 4106 Mud Wt. 9.1
 Top Packer Depth 4254 Drill Collars Run 147 Vis 6.3
 Bottom Packer Depth 4259 Wt. Pipe Run 8 WL 6.8
 Total Depth 4275 Chlorides 1800 ppm System LCM 1

Blow Description IF: Weak surface Died in 1 Min
FS: No Return Blow
FF: No Blow
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>MUD 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	Feet of	%gas	%oil	%water	%mud

Rec Total 2 BHT 177 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2125</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>07:30</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>08:30</u>
(C) First Final Flow <u>16</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:45</u>
(D) Initial Shut-In <u>38</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>11:50</u>
(E) Second Initial Flow <u>15</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:48</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments
(G) Final Shut-In <u>57</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2089</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5 Extra Packer
 Initial Shut-In 15 Extra Recorder
 Final Flow 15 Day Standby
 Final Shut-In 30 Accessibility

Sub Total 1674.20 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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52914

Well Name & No. Boombower "A" 1-16 Test No. 6 Date 9-6-13
 Company Larson Engineering Inc Elevation 2826 KB 2819 GL
 Address 562 W. St. Rd 4 Opm. Co. KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 16 Twp. 17S Rge. 29W Co. Lane State KS

Interval Tested 4418-4500 Zone Tested Pawnee - Ft. Scott
 Anchor Length 82 Drill Pipe Run 4261 Mud Wt. 9.1
 Top Packer Depth 4414 Drill Collars Run 147 Vis 49
 Bottom Packer Depth 4418 Wt. Pipe Run φ WL 8.4
 Total Depth 4500 Chlorides 1800 ppm System LCM 1

Blow Description IF: Built to Leak Surface Blow
IS: NO Return Blow
FF: NO Blow
FS: NO Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>MUD with oil spots</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 5 BHT 118 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2227</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>20:00</u>
(B) First Initial Flow <u>55</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>20:15</u>
(C) First Final Flow <u>55</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>22:13</u>
(D) Initial Shut-In <u>171</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>23:18</u>
(E) Second Initial Flow <u>55</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>01:07</u>
(F) Second Final Flow <u>56</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments _____
(G) Final Shut-In <u>201</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2289</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5 Shale Packer
 Initial Shut-In 15 Shale Packer
 Final Flow 15 Extra Packer
 Final Shut-In 30 Extra Recorder
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1674.20
 Sub Total 1674.20

Approved By Vern C Schrag Our Representative John Polt
 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 of 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. 52915

Well Name & No. Boombower "A" 1-16 Test No. 7 Date 9-7-13
 Company Larson Engineering Inc. Elevation 2826 KB 2819 GL
 Address 562 W. St. Rd 40 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 16 Twp. 17S Rge. 29W Co. LANE State KS

Interval Tested 4497-4560 Zone Tested Cherokee
 Anchor Length 63 Drill Pipe Run 4330 Mud Wt. 9.1
 Top Packer Depth 4493 Drill Collars Run 147 Vis 52
 Bottom Packer Depth 4497 Wt. Pipe Run Ø WL 8.4
 Total Depth 4560 Chlorides 1600 ppm System LCM 1

Blow Description IF: Built to 2" Blow
IS: No Return Blow
FF: BOB in 20 Min
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>Ø</u>	<u>Feet of GLP = 216</u>	<u>100</u>			
<u>30</u>	<u>Feet of Free Oil</u>		<u>100</u>		
<u>147</u>	<u>Feet of geom</u>	<u>5</u>	<u>15</u>	<u>80</u>	

Rec Total 171 BHT 122 Gravity 37 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2279</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>12:30</u>
(B) First Initial Flow <u>46</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>15:20 13:05</u>
(C) First Final Flow <u>56</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>15:20</u>
(D) Initial Shut-In <u>1206</u>	<input checked="" type="checkbox"/> Circ Sub	T-Pulled <u>17:10</u>
(E) Second Initial Flow <u>57</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>19:07</u>
(F) Second Final Flow <u>87</u>	<input checked="" type="checkbox"/> Mileage <u>64 RT</u> 99.20	Comments _____
(G) Final Shut-In <u>1231</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2237</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 5 Shale Packer
 Initial Shut-In 15 Extra Packer
 Final Flow 30 Extra Recorder
 Final Shut-In 60 Day Standby
 Accessibility

Sub Total 1674.20 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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