



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.16 @ 13:50:42

End Date: 2014.04.16 @ 18:20:42

Job Ticket #: 55739 DST #: 1

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

Printed: 2014.04.24 @ 14:32:06



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55739 **DST#: 1**
 Test Start: 2014.04.16 @ 13:50:42

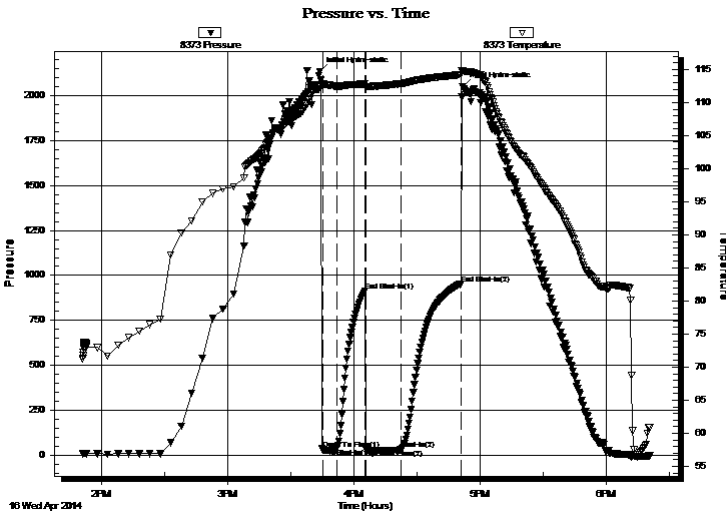
GENERAL INFORMATION:

Formation: **LKC H**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:45:12
 Time Test Ended: 18:20:42
Interval: 4154.00 ft (KB) To 4180.00 ft (KB) (TVD)
 Total Depth: 4180.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8373 Inside
 Press@RunDepth: 32.49 psig @ 4155.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.16 End Date: 2014.04.16 Last Calib.: 2014.04.16
 Start Time: 13:50:47 End Time: 18:20:41 Time On Btm: 2014.04.16 @ 15:43:42
 Time Off Btm: 2014.04.16 @ 16:51:42

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

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2133.06	112.65	Initial Hydro-static
2	31.33	112.87	Open To Flow (1)
8	37.35	112.44	Shut-In(1)
22	912.11	112.80	End Shut-In(1)
22	30.47	112.41	Open To Flow (2)
39	32.49	112.84	Shut-In(2)
67	952.84	114.23	End Shut-In(2)
68	2048.73	114.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud oil spots 100%m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55739

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.16 @ 13:50:42

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:45:12

Time Test Ended: 18:20:42

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 60

Interval: **4154.00 ft (KB) To 4180.00 ft (KB) (TVD)**

Reference Elevations: 2752.00 ft (KB)

Total Depth: 4180.00 ft (KB) (TVD)

2745.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4155.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.16

End Date:

2014.04.16

Last Calib.:

2014.04.16

Start Time: 13:50:10

End Time:

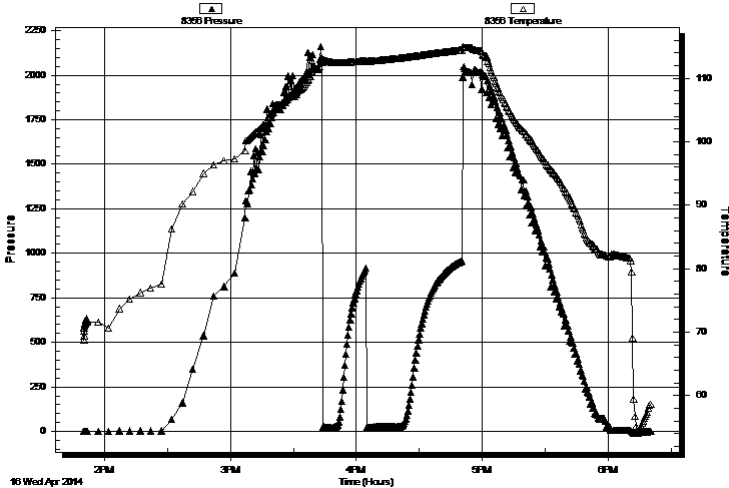
18:20:04

Time On Btm:

Time Off Btm:

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

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud oil spots 100%m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55739

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.16 @ 13:50:42

Tool Information

Drill Pipe:	Length: 4013.00 ft	Diameter: 3.80 inches	Volume: 56.29 bbl	Tool Weight:	2000.00 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: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 56.90 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4154.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	54.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4127.00	
Shut In Tool	5.00			4132.00	
Hydraulic tool	5.00			4137.00	
Jars	5.00			4142.00	
Safety Joint	3.00			4145.00	
Packer	5.00			4150.00	28.00 Bottom Of Top Packer
Packer	4.00			4154.00	
Stubb	1.00			4155.00	
Recorder	0.00	8373	Inside	4155.00	
Recorder	0.00	8356	Outside	4155.00	
Perforations	20.00			4175.00	
Bullnose	5.00			4180.00	26.00 Bottom Packers & Anchor

Total Tool Length: 54.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55739

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.16 @ 13:50:42

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:

bbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud oil spots 100%m	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

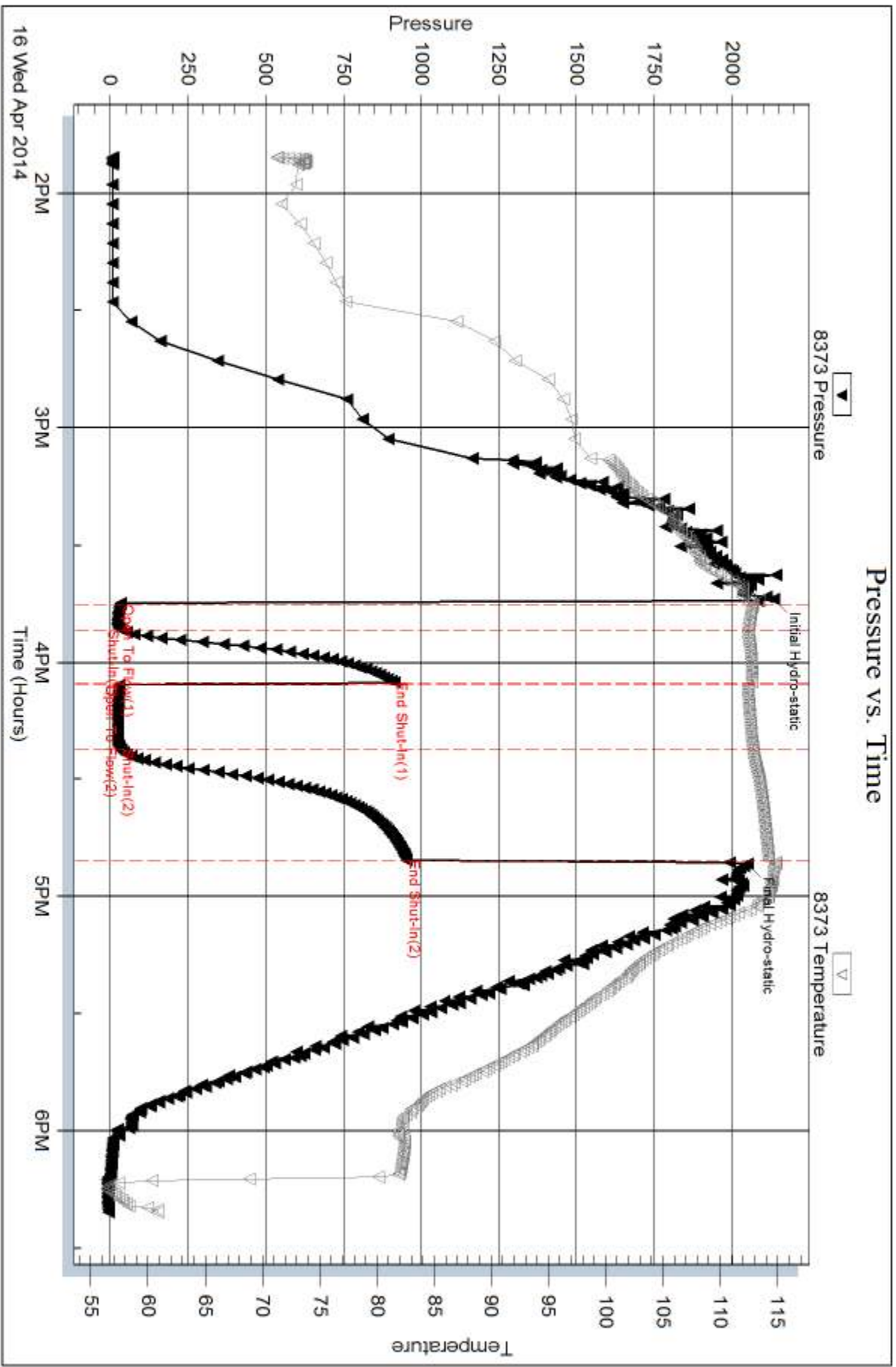
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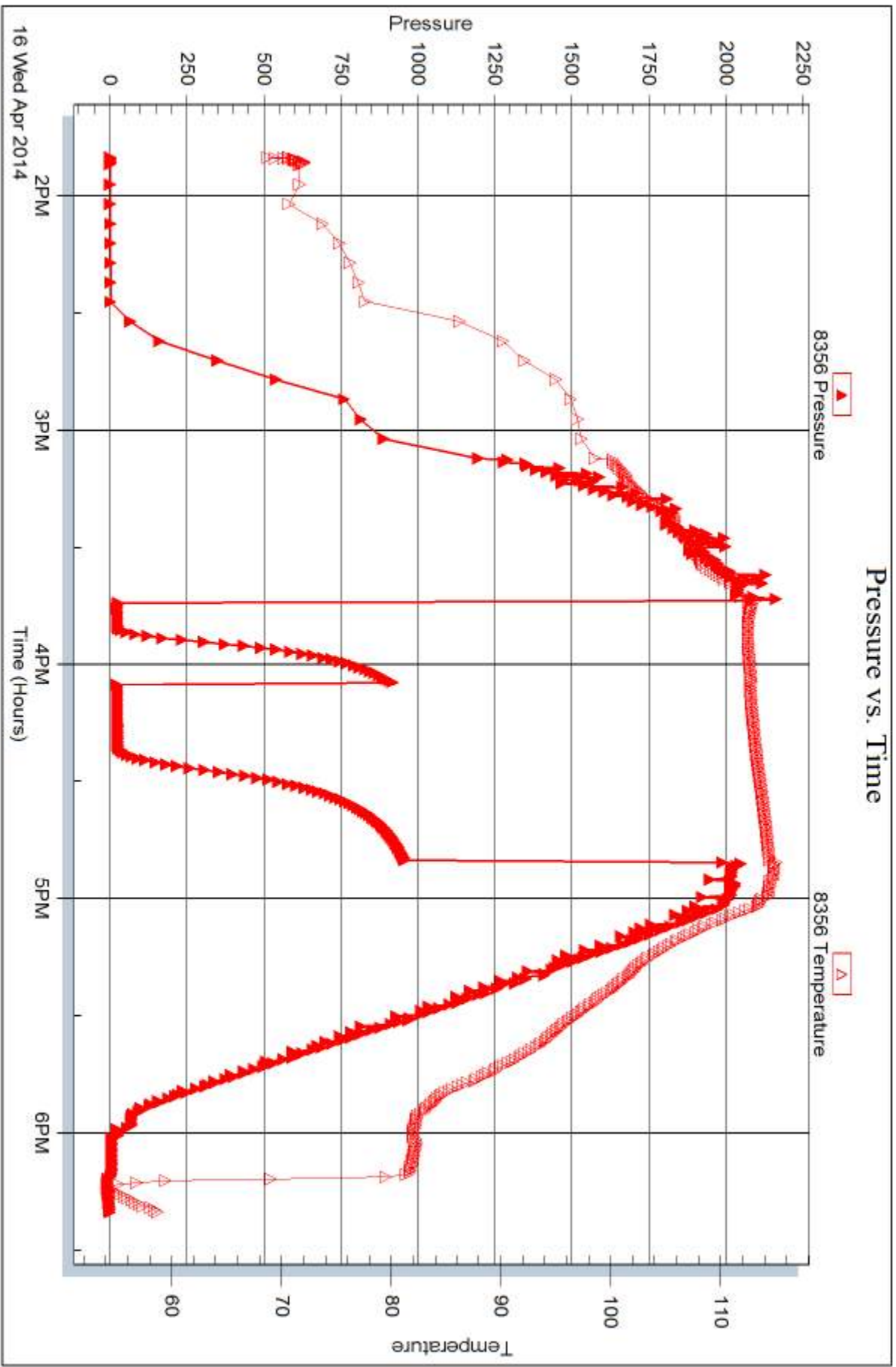
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.17 @ 05:29:46

End Date: 2014.04.17 @ 10:00:46

Job Ticket #: 55740 DST #: 2

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

Printed: 2014.04.24 @ 14:31:43



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55740 **DST#: 2**
 Test Start: 2014.04.17 @ 05:29:46

GENERAL INFORMATION:

Formation: **LKC J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:06:46
 Time Test Ended: 10:00:46
 Interval: **4222.00 ft (KB) To 4241.00 ft (KB) (TVD)**
 Total Depth: 4222.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

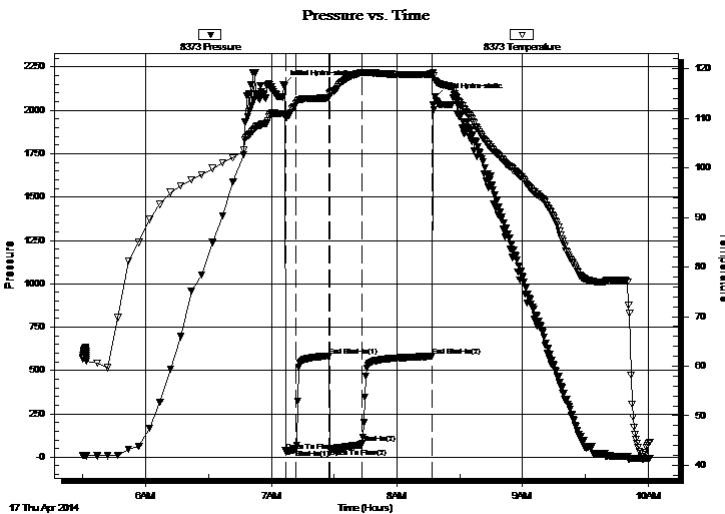
Serial #: 8373

Inside

Press@RunDepth: 78.11 psig @ 4223.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.17 End Date: 2014.04.17 Last Calib.: 2014.04.17
 Start Time: 05:29:51 End Time: 10:00:45 Time On Btm: 2014.04.17 @ 07:05:46
 Time Off Btm: 2014.04.17 @ 08:18:16

TEST COMMENT: IF: Weak blow built to 1 1/4" in 5 min.
 IS: No return.
 FF: 1/4" blow built to 3" in 15 min.
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2147.12	110.96	Initial Hydro-static
1	36.06	110.24	Open To Flow (1)
6	45.17	112.92	Shut-In(1)
22	583.73	114.15	End Shut-In(1)
22	48.96	115.04	Open To Flow (2)
38	78.11	119.29	Shut-In(2)
71	582.68	118.93	End Shut-In(2)
73	2076.17	117.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 5%o 95%m	0.30
30.00	ocm 30%o 70%m	0.15
1.00	free oil 100%o	0.00

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55740

DST#: 2

Test Start: 2014.04.17 @ 05:29:46

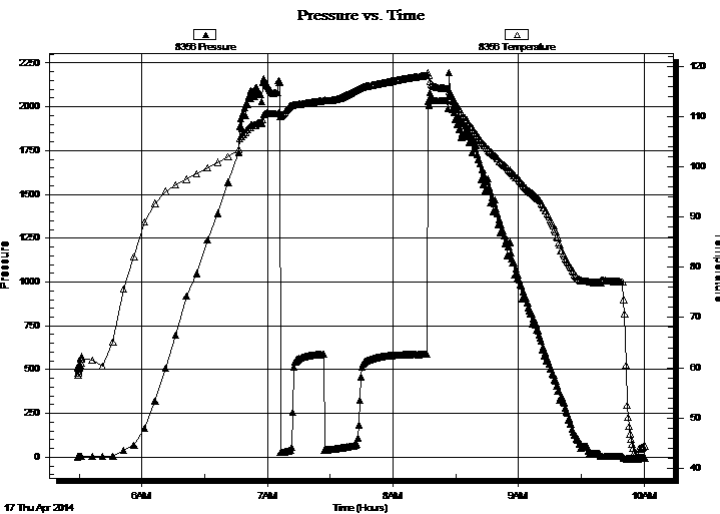
GENERAL INFORMATION:

Formation: **LKC J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 07:06:46
 Tester: Brandon Turley
 Time Test Ended: 10:00:46
 Unit No: 60
 Interval: **4222.00 ft (KB) To 4241.00 ft (KB) (TVD)**
 Reference Elevations: 2752.00 ft (KB)
 Total Depth: 4222.00 ft (KB) (TVD)
 2745.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4223.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.17 End Date: 2014.04.17 Last Calib.: 2014.04.17
 Start Time: 05:29:21 End Time: 10:00:15 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Weak blow built to 1 1/4" in 5 min.
 IS: No return.
 FF: 1/4" blow built to 3" in 15 min.
 FS: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 5%o 95%m	0.30
30.00	ocm 30%o 70%m	0.15
1.00	free oil 100%o	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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55740

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 05:29:46

Tool Information

Drill Pipe:	Length: 4099.00 ft	Diameter: 3.80 inches	Volume: 57.50 bbl	Tool Weight:	2000.00 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: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 58.11 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4222.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	19.00 ft				
Tool Length:	47.00 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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Stubb	1.00			4195.00	
Shut In Tool	5.00			4200.00	
Hydraulic tool	5.00			4205.00	
Jars	5.00			4210.00	
Safety Joint	3.00			4213.00	
Packer	5.00			4218.00	28.00 Bottom Of Top Packer
Packer	4.00			4222.00	
Stubb	1.00			4223.00	
Recorder	0.00	8373	Inside	4223.00	
Recorder	0.00	8356	Outside	4223.00	
Perforations	13.00			4236.00	
Bullnose	5.00			4241.00	19.00 Bottom Packers & Anchor

Total Tool Length: 47.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55740

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 05:29:46

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	ocm 5%o 95%m	0.305
30.00	ocm 30%o 70%m	0.148
1.00	free oil 100%o	0.005

Total Length: 93.00 ft Total Volume: 0.458 bbl

Num Fluid Samples: 0

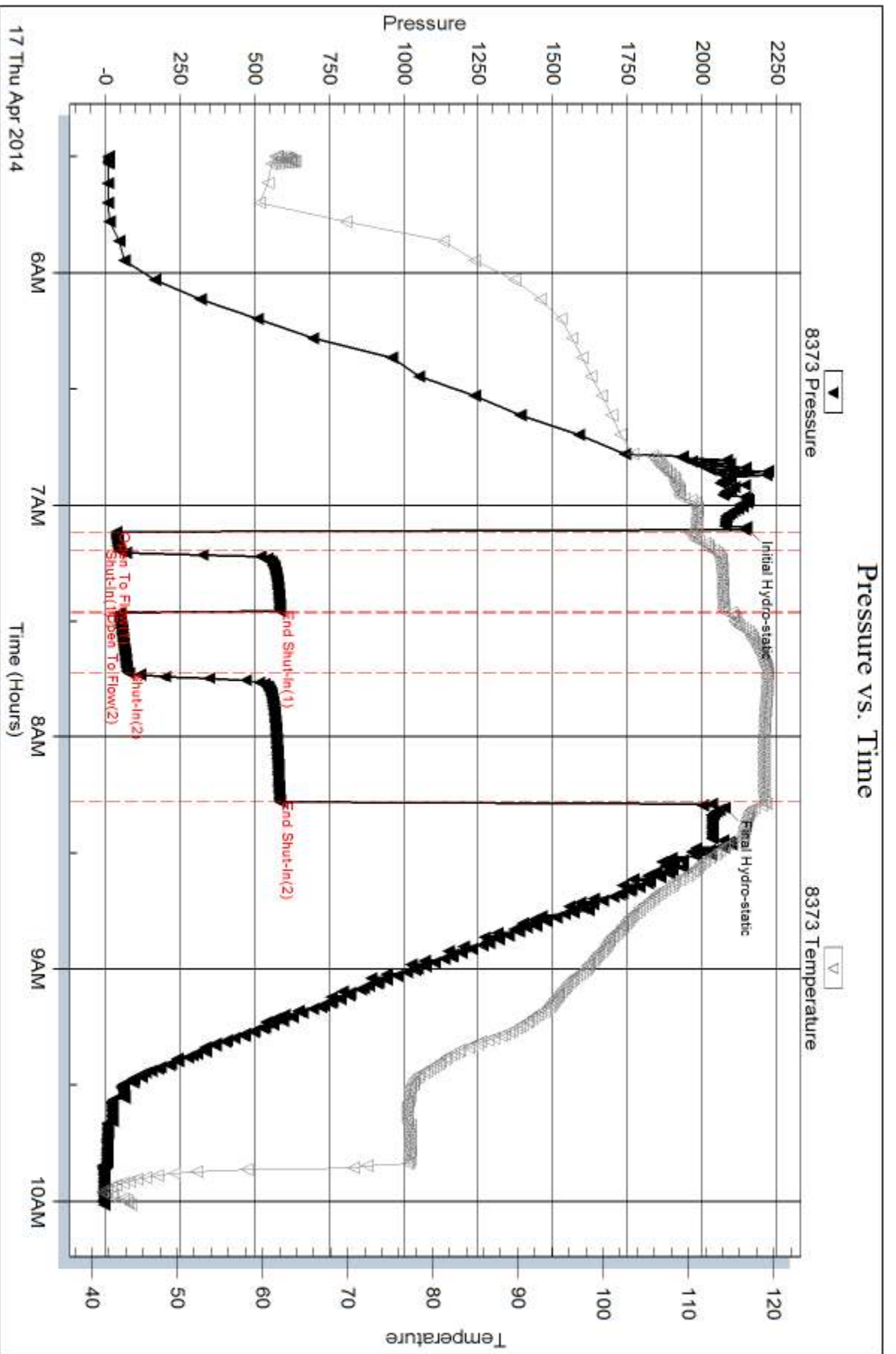
Num Gas Bombs: 0

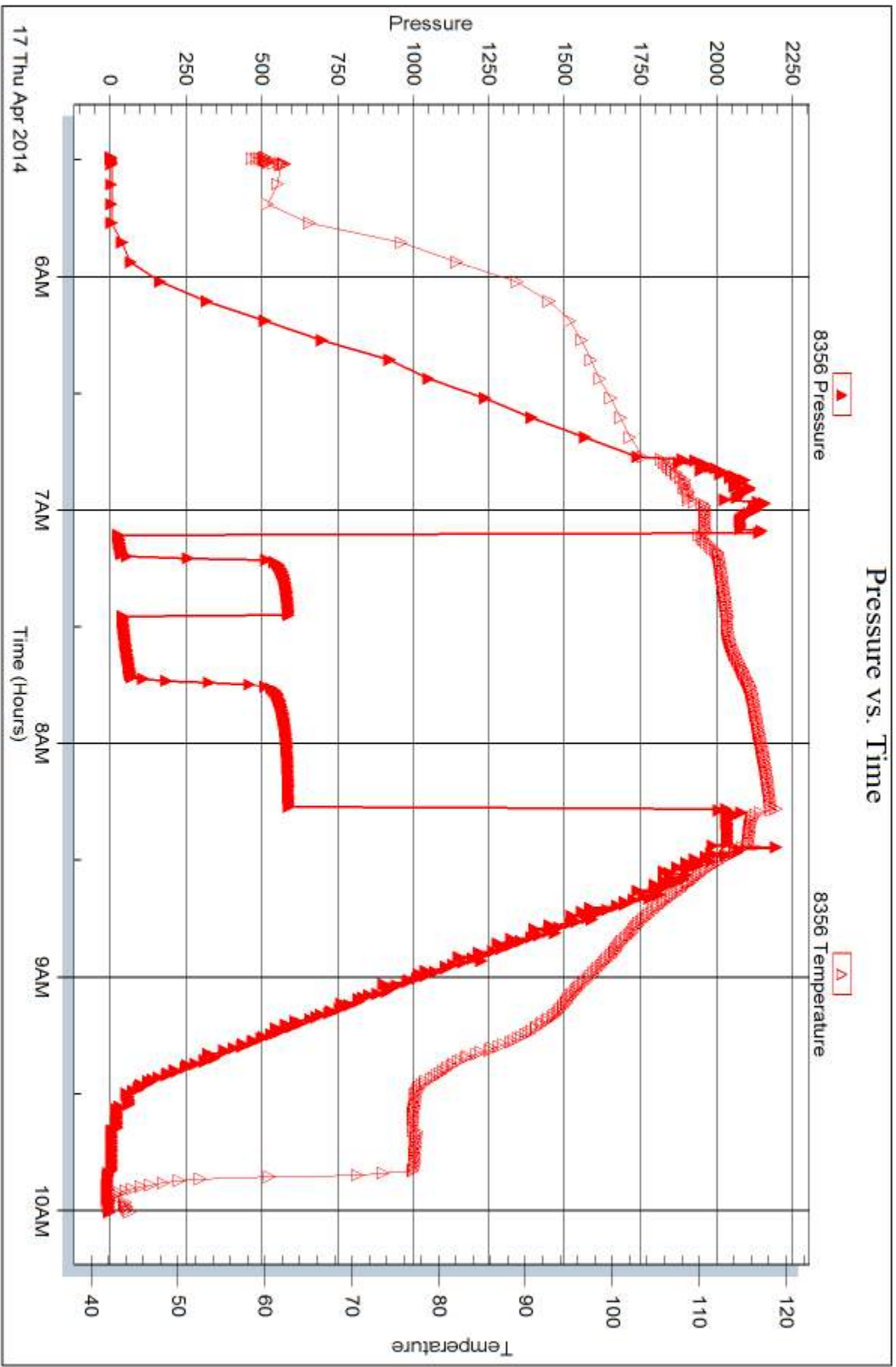
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.17 @ 17:54:16

End Date: 2014.04.17 @ 23:02:46

Job Ticket #: 55741 DST #: 3

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

Printed: 2014.04.24 @ 14:31:21



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55741 **DST#: 3**
 Test Start: 2014.04.17 @ 17:54:16

GENERAL INFORMATION:

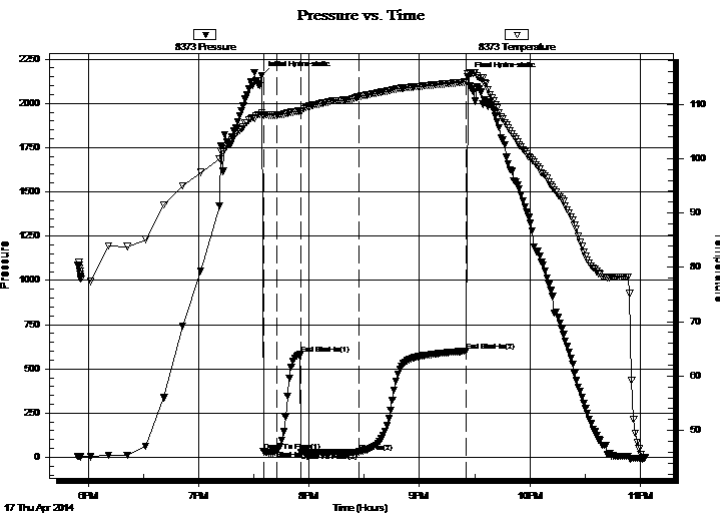
Formation: **LKC K**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:35:16
 Time Test Ended: 23:02:46
Interval: 4254.00 ft (KB) To 4265.00 ft (KB) (TVD)
 Total Depth: 4265.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8373

Inside

Press@RunDepth: 30.42 psig @ 4255.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.17 End Date: 2014.04.17 Last Calib.: 2014.04.17
 Start Time: 17:54:21 End Time: 23:02:45 Time On Btm: 2014.04.17 @ 19:34:16
 Time Off Btm: 2014.04.17 @ 21:26:16

TEST COMMENT: IF: Weak surface blow.
 IS: No return.
 FF: Surface blow built to 1" in 30 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2158.52	108.43	Initial Hydro-static
1	32.03	107.96	Open To Flow (1)
9	39.14	108.04	Shut-In(1)
21	584.66	108.77	End Shut-In(1)
22	29.30	108.60	Open To Flow (2)
53	30.42	111.38	Shut-In(2)
111	600.65	114.11	End Shut-In(2)
112	2152.50	115.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm 10%o 90%o	0.02
2.00	free oil 100%o	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

ATTN: Vern Schrag

Job Ticket: 55741

DST#: 3

Test Start: 2014.04.17 @ 17:54:16

GENERAL INFORMATION:

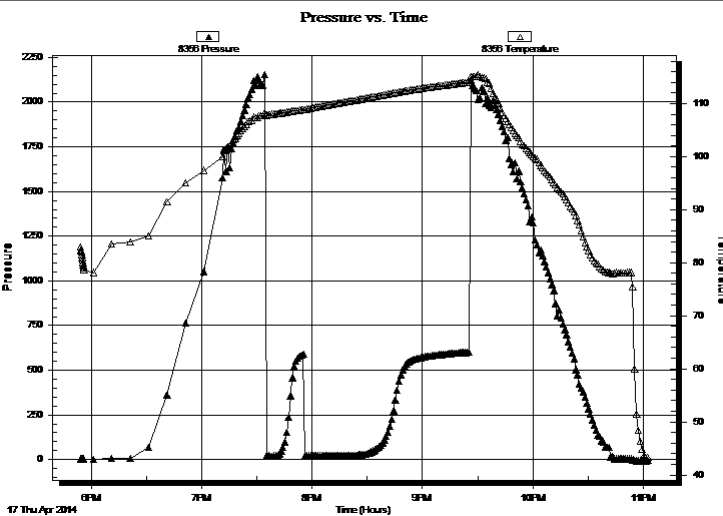
Formation: **LKC K**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 19:35:16 Tester: Brandon Turley
 Time Test Ended: 23:02:46 Unit No: 60
 Interval: **4254.00 ft (KB) To 4265.00 ft (KB) (TVD)** Reference Elevations: 2752.00 ft (KB)
 Total Depth: 4265.00 ft (KB) (TVD) 2745.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8356

Outside

Press@RunDepth: psig @ 4255.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.17 End Date: 2014.04.17 Last Calib.: 2014.04.17
 Start Time: 17:54:22 End Time: 23:02:46 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Weak surface blow .
 IS: No return.
 FF: Surface blow built to 1" in 30 min.
 FS: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm 10%o 90%m	0.02
2.00	free oil 100%o	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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55741

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 17:54:16

Tool Information

Drill Pipe:	Length: 4132.00 ft	Diameter: 3.80 inches	Volume: 57.96 bbl	Tool Weight:	2000.00 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: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 58.57 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4254.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	11.00 ft				
Tool Length:	39.00 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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Stubb	1.00			4227.00	
Shut In Tool	5.00			4232.00	
Hydraulic tool	5.00			4237.00	
Jars	5.00			4242.00	
Safety Joint	3.00			4245.00	
Packer	5.00			4250.00	28.00 Bottom Of Top Packer
Packer	4.00			4254.00	
Stubb	1.00			4255.00	
Recorder	0.00	8373	Inside	4255.00	
Recorder	0.00	8356	Outside	4255.00	
Perforations	5.00			4260.00	
Bullnose	5.00			4265.00	11.00 Bottom Packers & Anchor

Total Tool Length: 39.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55741

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 17:54:16

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: 51.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	ocm 10%o 90%m	0.025
2.00	free oil 100%o	0.010

Total Length: 7.00 ft Total Volume: 0.035 bbl

Num Fluid Samples: 0

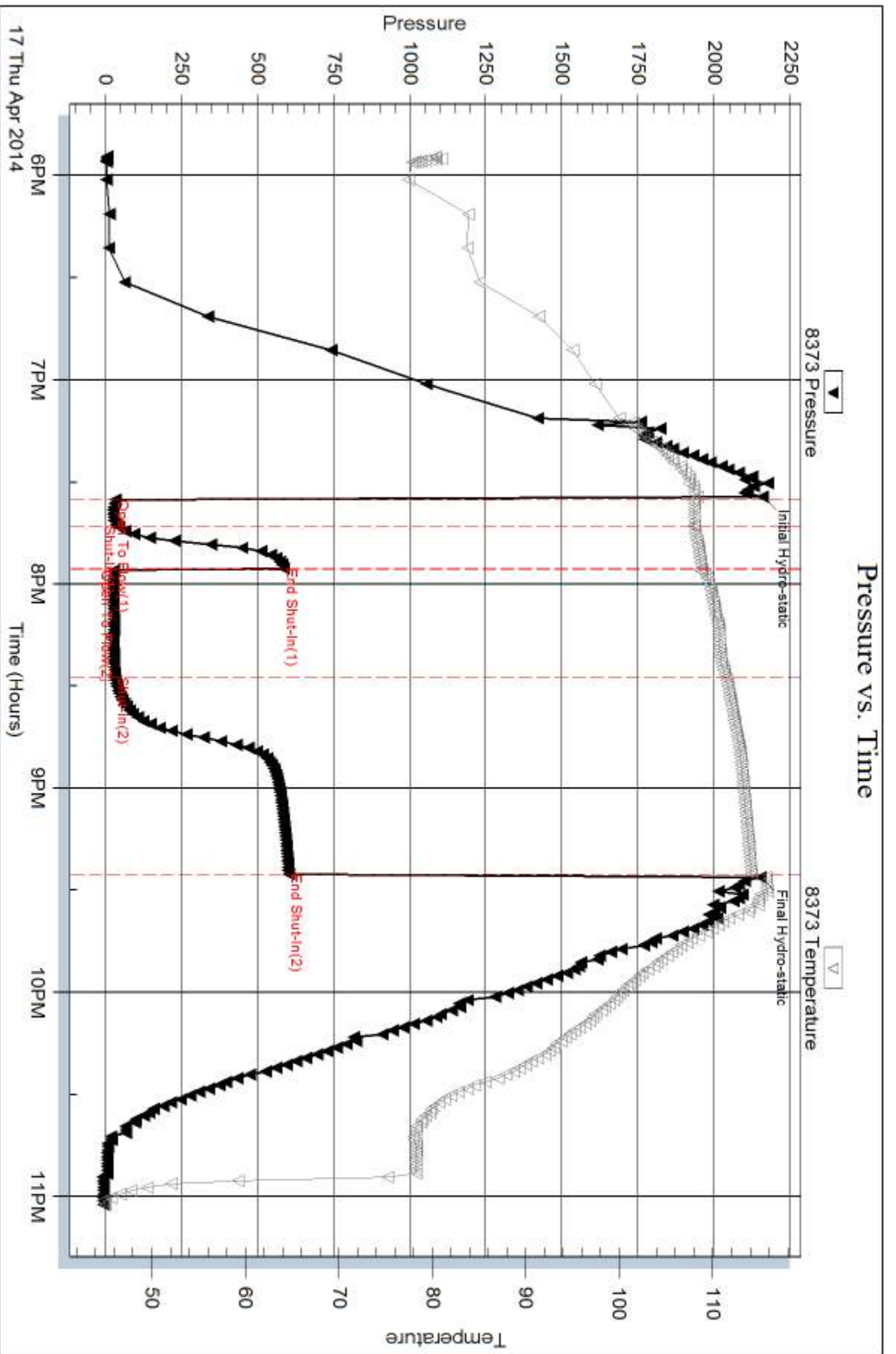
Num Gas Bombs: 0

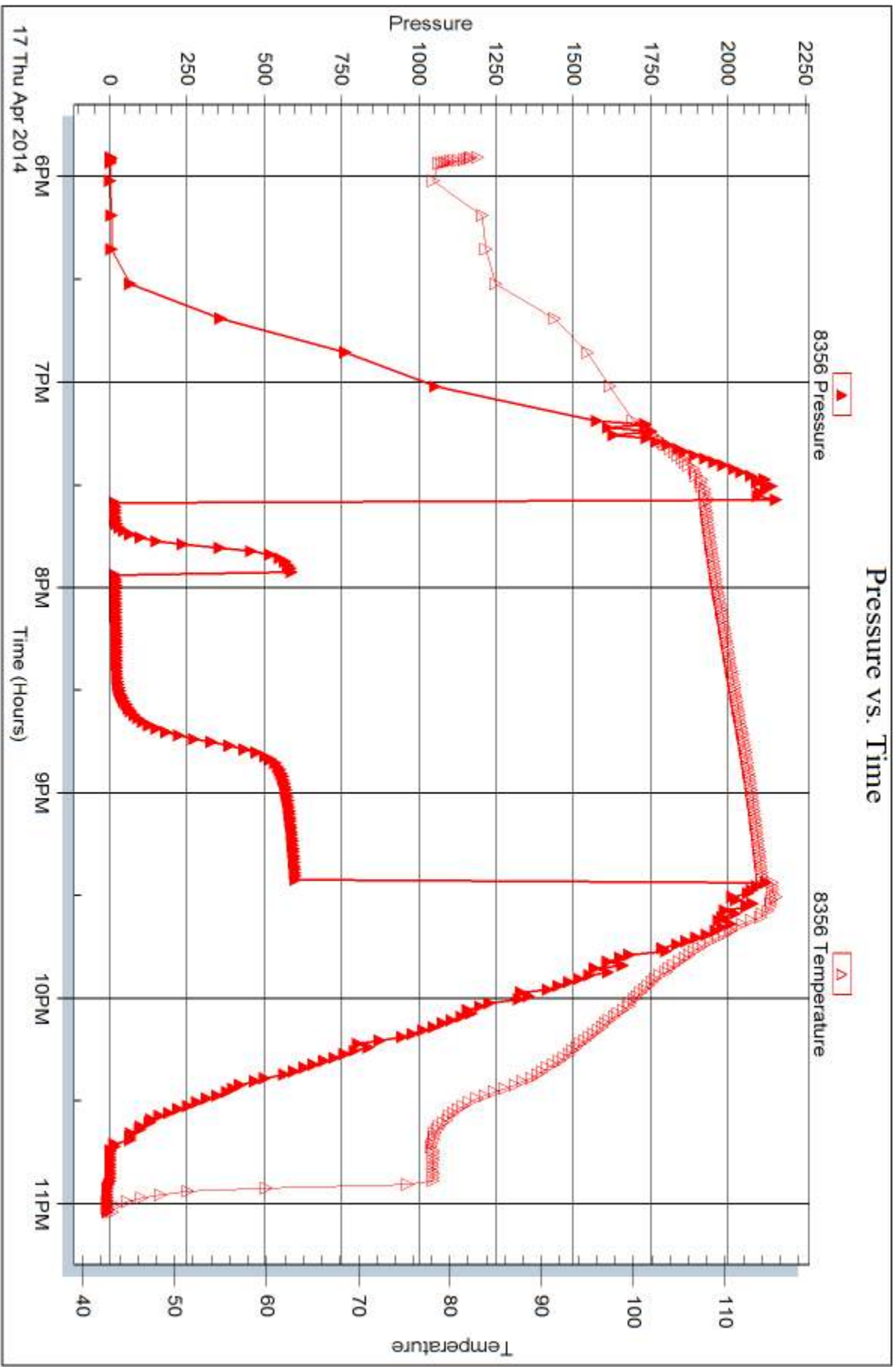
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.18 @ 06:08:28

End Date: 2014.04.18 @ 10:50:58

Job Ticket #: 55742 DST #: 4

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

Printed: 2014.04.24 @ 14:29:31



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55742

DST#: 4

Test Start: 2014.04.18 @ 06:08:28

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:10:58

Time Test Ended: 10:50:58

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4252.00 ft (KB) To 4270.00 ft (KB) (TVD)

Total Depth: 4270.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2752.00 ft (KB)

2745.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8373

Inside

Press@RunDepth: 32.10 psig @ 4253.00 ft (KB)

Start Date: 2014.04.18

End Date:

2014.04.18

Start Time: 06:08:33

End Time:

10:50:57

Capacity: 8000.00 psig

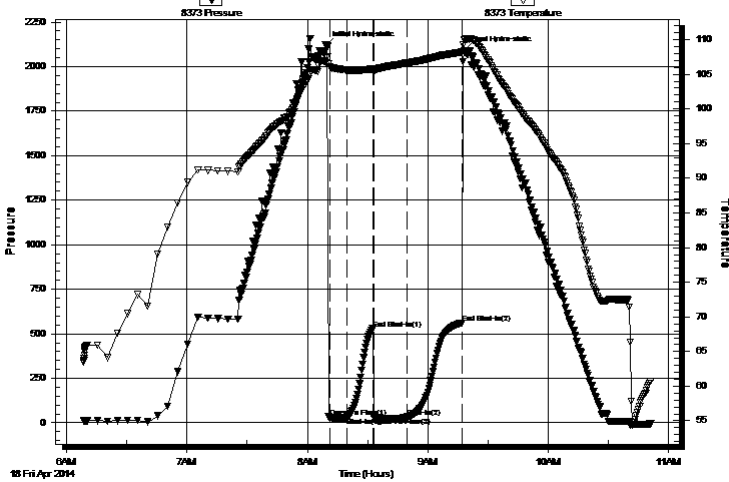
Last Calib.: 2014.04.18

Time On Btm: 2014.04.18 @ 08:08:58

Time Off Btm: 2014.04.18 @ 09:17:58

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

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2119.91	106.65	Initial Hydro-static
2	31.13	106.13	Open To Flow (1)
11	31.65	105.59	Shut-In(1)
24	528.92	105.74	End Shut-In(1)
24	30.55	105.53	Open To Flow (2)
41	32.10	106.62	Shut-In(2)
68	561.77	108.21	End Shut-In(2)
69	2087.98	110.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
7.00	ocm 30%o 70%m	0.03

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55742

DST#: 4

Test Start: 2014.04.18 @ 06:08:28

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:10:58

Time Test Ended: 10:50:58

Interval: 4252.00 ft (KB) To 4270.00 ft (KB) (TVD)

Total Depth: 4270.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Reference Elevations: 2752.00 ft (KB)

2745.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 **Outside**

Press@RunDepth: psig @ 4253.00 ft (KB)

Start Date: 2014.04.18

End Date:

2014.04.18

Start Time: 06:08:06

End Time:

10:50:30

Capacity: 8000.00 psig

Last Calib.:

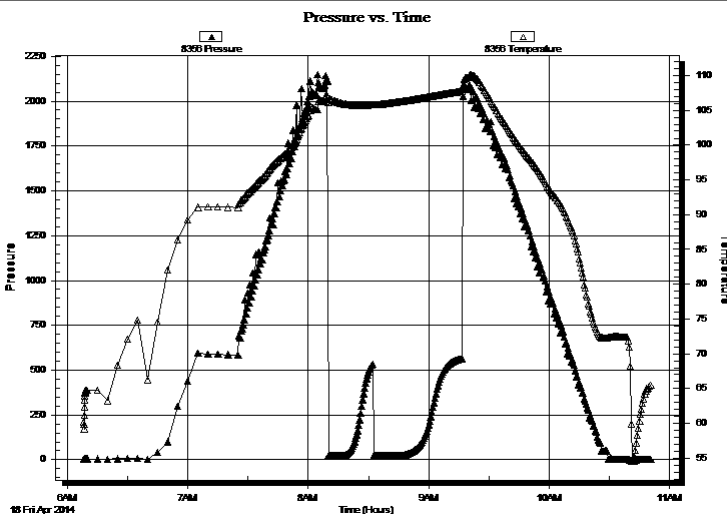
2014.04.18

Time On Btm:

Time Off Btm:

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

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
7.00	ocm 30%o 70%m	0.03

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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55742

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.18 @ 06:08:28

Tool Information

Drill Pipe:	Length: 4104.00 ft	Diameter: 3.80 inches	Volume: 57.57 bbl	Tool Weight: 2000.00 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: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4252.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	18.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Stubb	1.00			4225.00	
Shut In Tool	5.00			4230.00	
Hydraulic tool	5.00			4235.00	
Jars	5.00			4240.00	
Safety Joint	3.00			4243.00	
Packer	5.00			4248.00	28.00 Bottom Of Top Packer
Packer	4.00			4252.00	
Stubb	1.00			4253.00	
Recorder	0.00	8373	Inside	4253.00	
Recorder	0.00	8356	Outside	4253.00	
Perforations	12.00			4265.00	
Bullnose	5.00			4270.00	18.00 Bottom Packers & Anchor

Total Tool Length: 46.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55742

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.18 @ 06:08:28

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
7.00	ocm 30%o 70%m	0.034

Total Length: 7.00 ft Total Volume: 0.034 bbl

Num Fluid Samples: 0

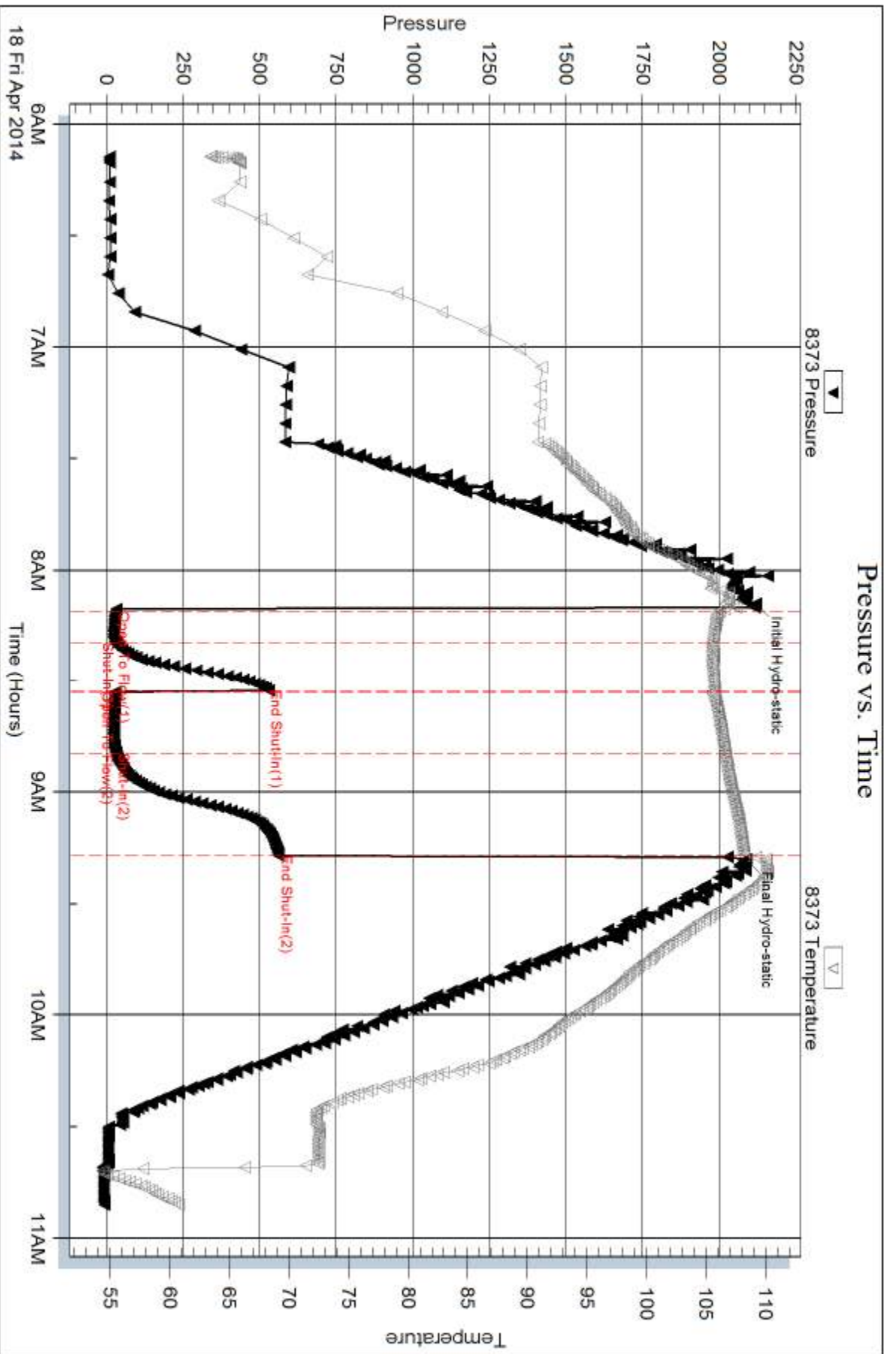
Num Gas Bombs: 0

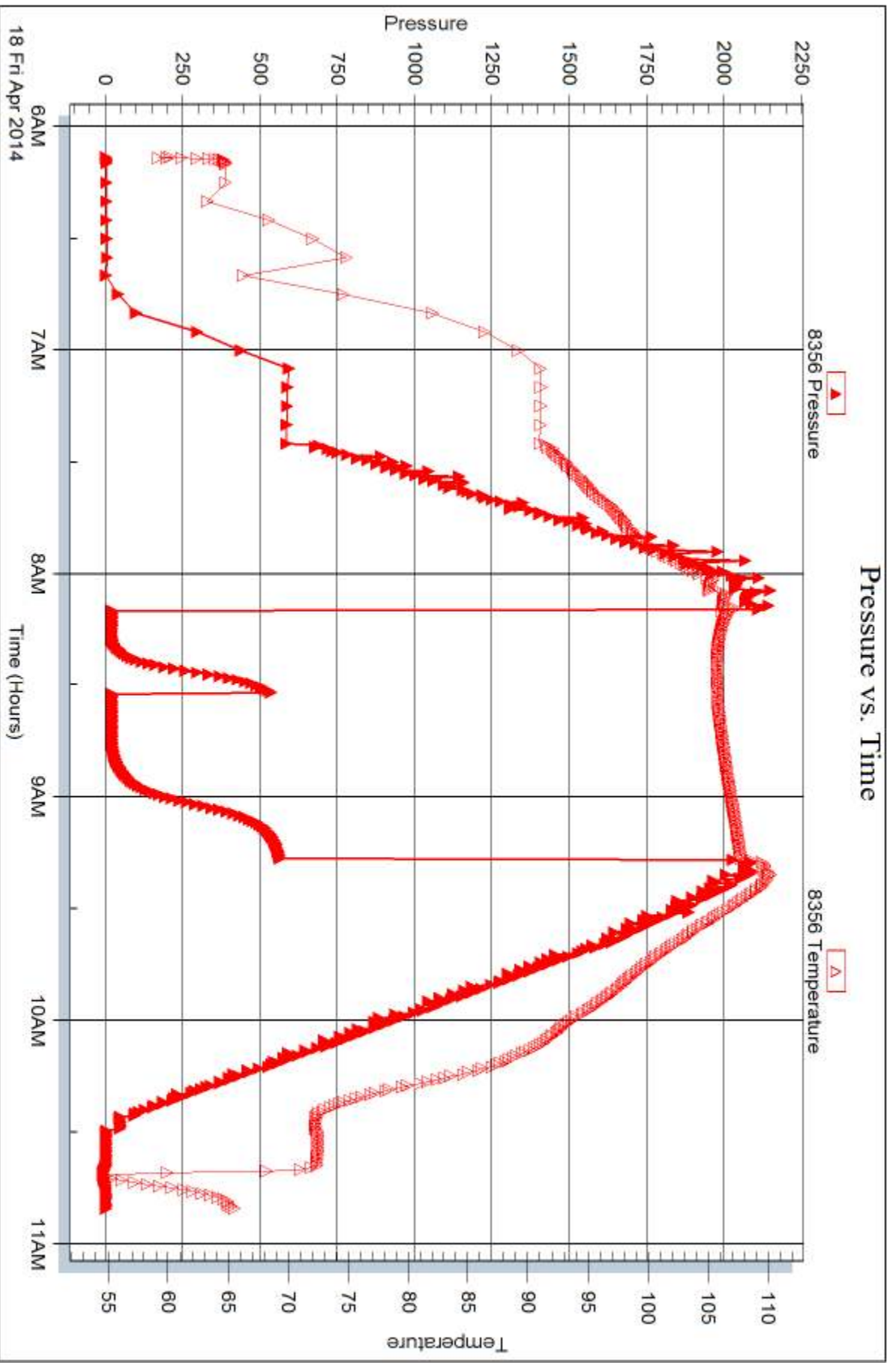
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.19 @ 00:12:19

End Date: 2014.04.19 @ 06:47:49

Job Ticket #: 55743 DST #: 5

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

Printed: 2014.04.24 @ 14:29:06



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55743 **DST#: 5**
 Test Start: 2014.04.19 @ 00:12:19

GENERAL INFORMATION:

Formation: **LKC L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:08:19
 Time Test Ended: 06:47:49
 Interval: **4288.00 ft (KB) To 4296.00 ft (KB) (TVD)**
 Total Depth: 4296.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

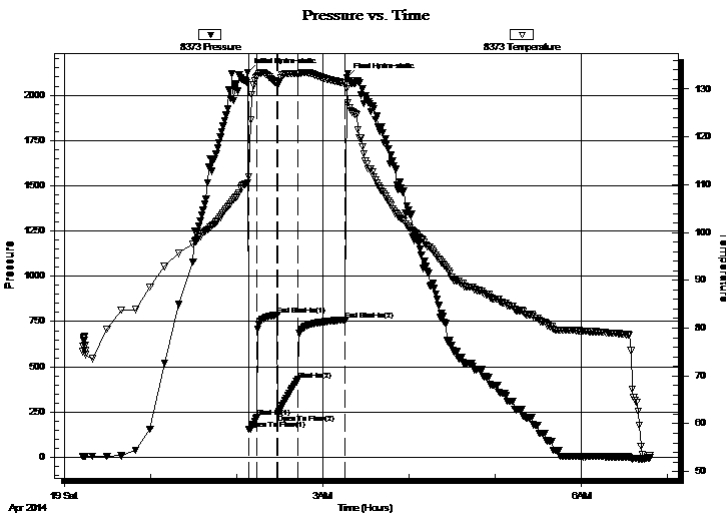
Serial #: 8373

Inside

Press@RunDepth: 428.38 psig @ 4289.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.19 End Date: 2014.04.19 Last Calib.: 2014.04.19
 Start Time: 00:12:24 End Time: 06:47:48 Time On Btm: 2014.04.19 @ 02:07:19
 Time Off Btm: 2014.04.19 @ 03:16:19

TEST COMMENT: IF: BOB in 30 sec.
 IS: BOB in 12 min.
 FF: BOB in 1 min.
 FS: BOB in 15 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2125.79	110.37	Initial Hydro-static
1	154.44	111.64	Open To Flow (1)
7	220.69	132.54	Shut-In(1)
21	786.90	131.13	End Shut-In(1)
21	240.25	130.77	Open To Flow (2)
35	428.38	133.16	Shut-In(2)
68	759.96	131.25	End Shut-In(2)
69	2098.00	130.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	mcgo 60%g 20%o 20%m	0.30
434.00	go 20%g 80%o	5.51
620.00	go 40%g 60%o	8.70
0.00	1178 GIP	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
562 W State Rd 4
Olmitz, KS 67564
ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55743

DST#: 5

Test Start: 2014.04.19 @ 00:12:19

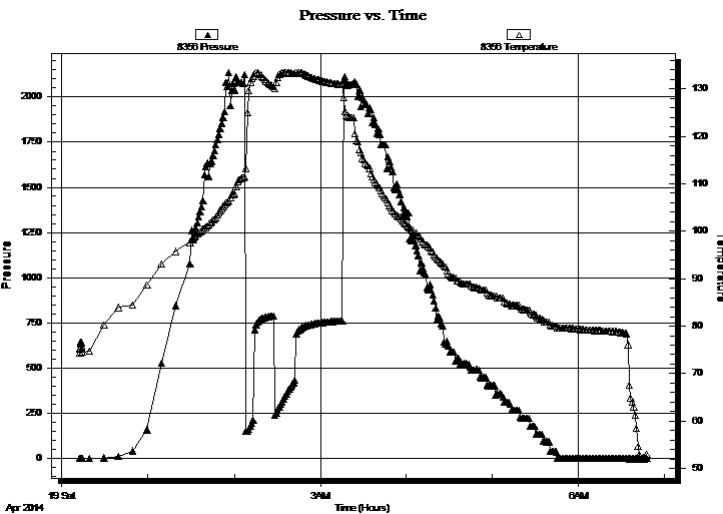
GENERAL INFORMATION:

Formation: **LKC L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:08:19
 Time Test Ended: 06:47:49
 Interval: **4288.00 ft (KB) To 4296.00 ft (KB) (TVD)**
 Total Depth: 4296.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4289.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.19 End Date: 2014.04.19 Last Calib.: 2014.04.19
 Start Time: 00:12:20 End Time: 06:47:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: BOB in 30 sec.
 IS: BOB in 12 min.
 FF: BOB in 1 min.
 FS: BOB in 15 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	mcgo 60%g 20%o 20%m	0.30
434.00	go 20%g 80%o	5.51
620.00	go 40%g 60%o	8.70
0.00	1178 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

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55743

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.04.19 @ 00:12:19

Tool Information

Drill Pipe:	Length: 4165.00 ft	Diameter: 3.80 inches	Volume: 58.42 bbl	Tool Weight:	2000.00 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: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 59.03 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4288.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	8.00 ft				
Tool Length:	36.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4261.00	
Shut In Tool	5.00			4266.00	
Hydraulic tool	5.00			4271.00	
Jars	5.00			4276.00	
Safety Joint	3.00			4279.00	
Packer	5.00			4284.00	28.00 Bottom Of Top Packer
Packer	4.00			4288.00	
Stubb	1.00			4289.00	
Recorder	0.00	8373	Inside	4289.00	
Recorder	0.00	8356	Outside	4289.00	
Perforations	2.00			4291.00	
Bullnose	5.00			4296.00	8.00 Bottom Packers & Anchor

Total Tool Length: 36.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55743

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.04.19 @ 00:12:19

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: 49.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
62.00	mcgo 60%g 20%o 20%m	0.305
434.00	go 20%g 80%o	5.514
620.00	go 40%g 60%o	8.697
0.00	1178 GIP	0.000

Total Length: 1116.00 ft Total Volume: 14.516 bbf

Num Fluid Samples: 0

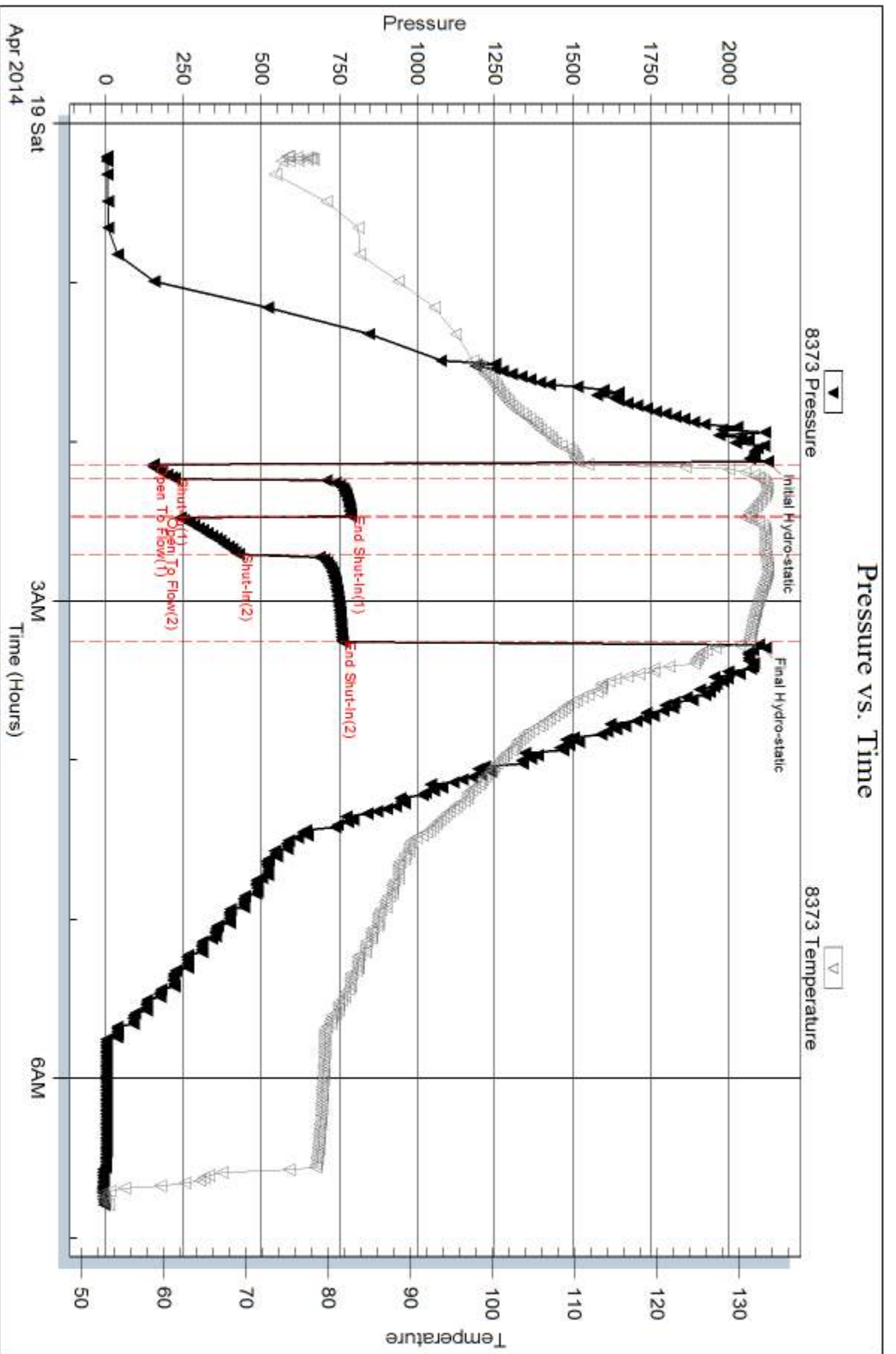
Num Gas Bombs: 0

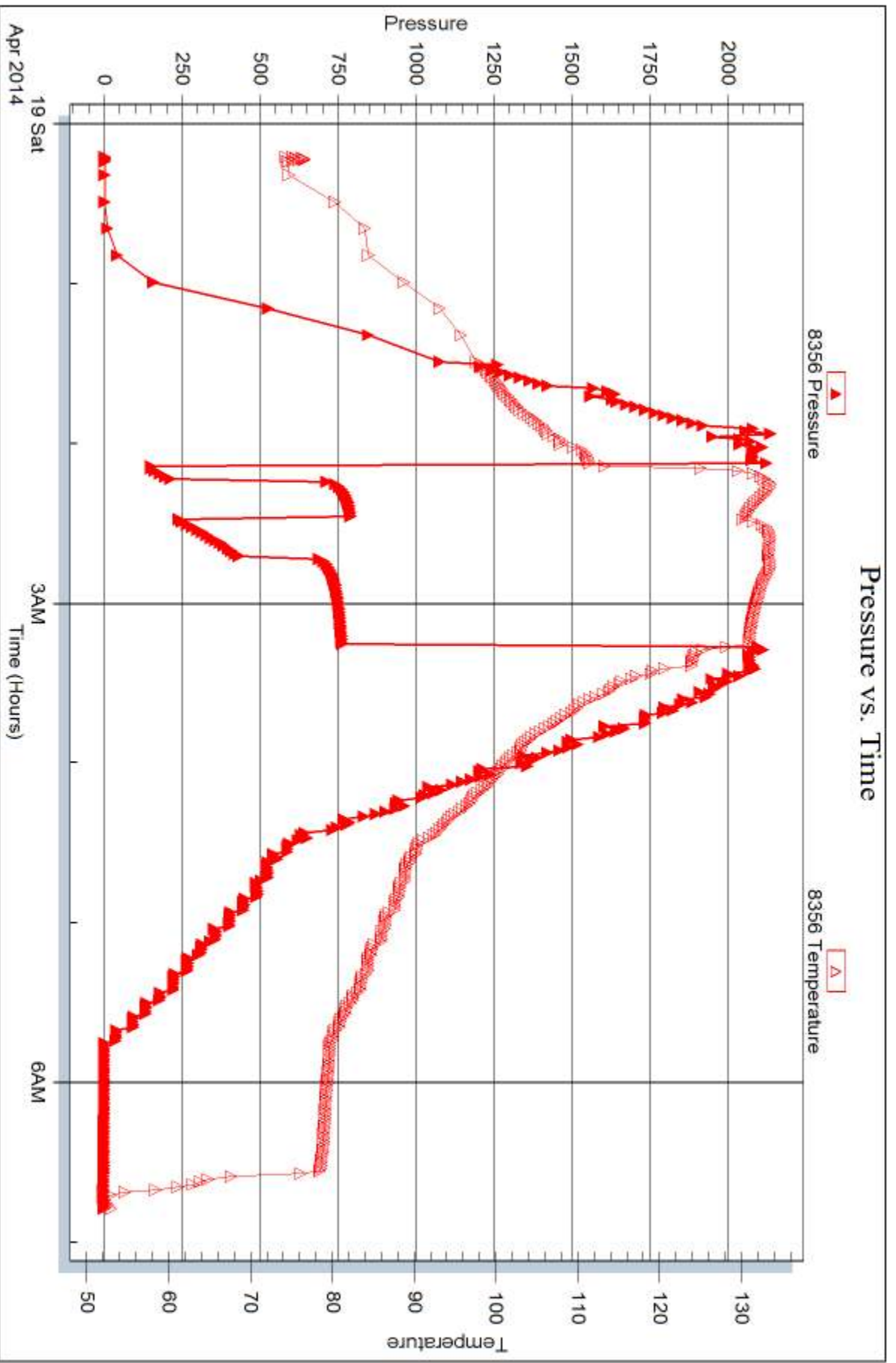
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 37@60=37







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.20 @ 02:57:00

End Date: 2014.04.20 @ 08:36:30

Job Ticket #: 55744 DST #: 6

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

Printed: 2014.04.24 @ 14:28:43



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering
562 W State Rd 4
Olmitz, KS 67564
ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55744

DST#: 6

Test Start: 2014.04.20 @ 02:57:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:00:30

Time Test Ended: 08:36:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4331.00 ft (KB) To 4440.00 ft (KB) (TVD)

Reference Elevations: 2752.00 ft (KB)

Total Depth: 4440.00 ft (KB) (TVD)

2745.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8373

Inside

Press@RunDepth: 25.12 psig @ 4336.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.20

End Date:

2014.04.20

Last Calib.:

2014.04.20

Start Time:

02:57:05

End Time:

08:36:29

Time On Btm:

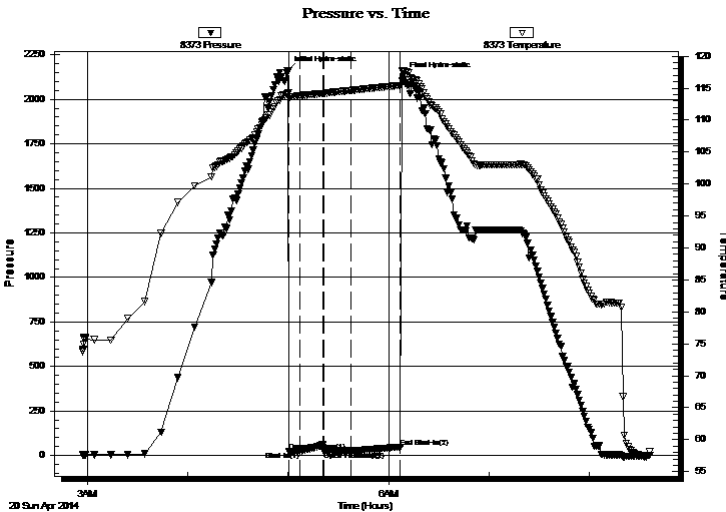
2014.04.20 @ 04:59:30

Time Off Btm:

2014.04.20 @ 06:08:30

TEST COMMENT: IF: 1/4" blow built 1/2"
IS: No return.
FF: Surface blow never built.
FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2162.91	114.17	Initial Hydro-static
1	24.61	113.67	Open To Flow (1)
8	23.66	113.83	Shut-In(1)
21	59.75	114.15	End Shut-In(1)
22	25.77	114.12	Open To Flow (2)
38	25.12	114.64	Shut-In(2)
67	47.77	115.44	End Shut-In(2)
69	2128.37	117.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud oil spots 100%m	0.05

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering
562 W State Rd 4
Olmitz, KS 67564
ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
Job Ticket: 55744 **DST#: 6**
Test Start: 2014.04.20 @ 02:57:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:00:30

Time Test Ended: 08:36:30

Test Type: Conventional Bottom Hole (Reset)
Tester: Brandon Turley
Unit No: 60

Interval: 4331.00 ft (KB) To 4440.00 ft (KB) (TVD)

Total Depth: 4440.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2752.00 ft (KB)
2745.00 ft (CF)
KB to GR/CF: 7.00 ft

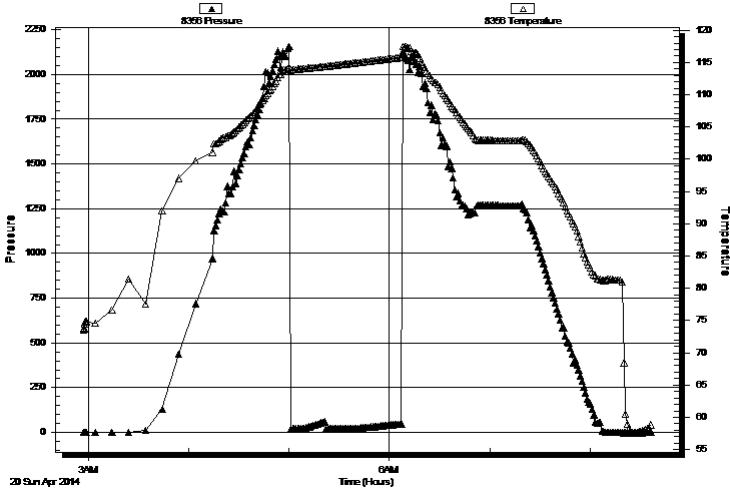
Serial #: 8356 Outside

Press@RunDepth: psig @ 4336.00 ft (KB)
Start Date: 2014.04.20 End Date: 2014.04.20
Start Time: 02:57:20 End Time: 08:36:44

Capacity: 8000.00 psig
Last Calib.: 2014.04.20
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: 1/4" blow built 1/2"
IS: No return.
FF: Surface blow never built.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud oil spots 100%m	0.05

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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55744

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.04.20 @ 02:57:00

Tool Information

Drill Pipe:	Length: 4198.00 ft	Diameter: 3.80 inches	Volume: 58.89 bbl	Tool Weight:	2000.00 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: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 59.50 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4331.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	113.00 ft				
Tool Length:	137.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4308.00	
Shut In Tool	5.00			4313.00	
Hydraulic tool	5.00			4318.00	
Jars	5.00			4323.00	
Safety Joint	3.00			4326.00	
Packer	5.00			4331.00	24.00 Bottom Of Top Packer
Packer - Shale	4.00			4335.00	
Stubb	1.00			4336.00	
Recorder	0.00	8373	Inside	4336.00	
Recorder	0.00	8356	Outside	4336.00	
Perforations	8.00			4344.00	
Change Over Sub	1.00			4345.00	
Drill Pipe	93.00			4438.00	
Change Over Sub	1.00			4439.00	
Bullnose	5.00			4444.00	113.00 Anchor Tool

Total Tool Length: 137.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55744

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.04.20 @ 02:57:00

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: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud oil spots 100%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

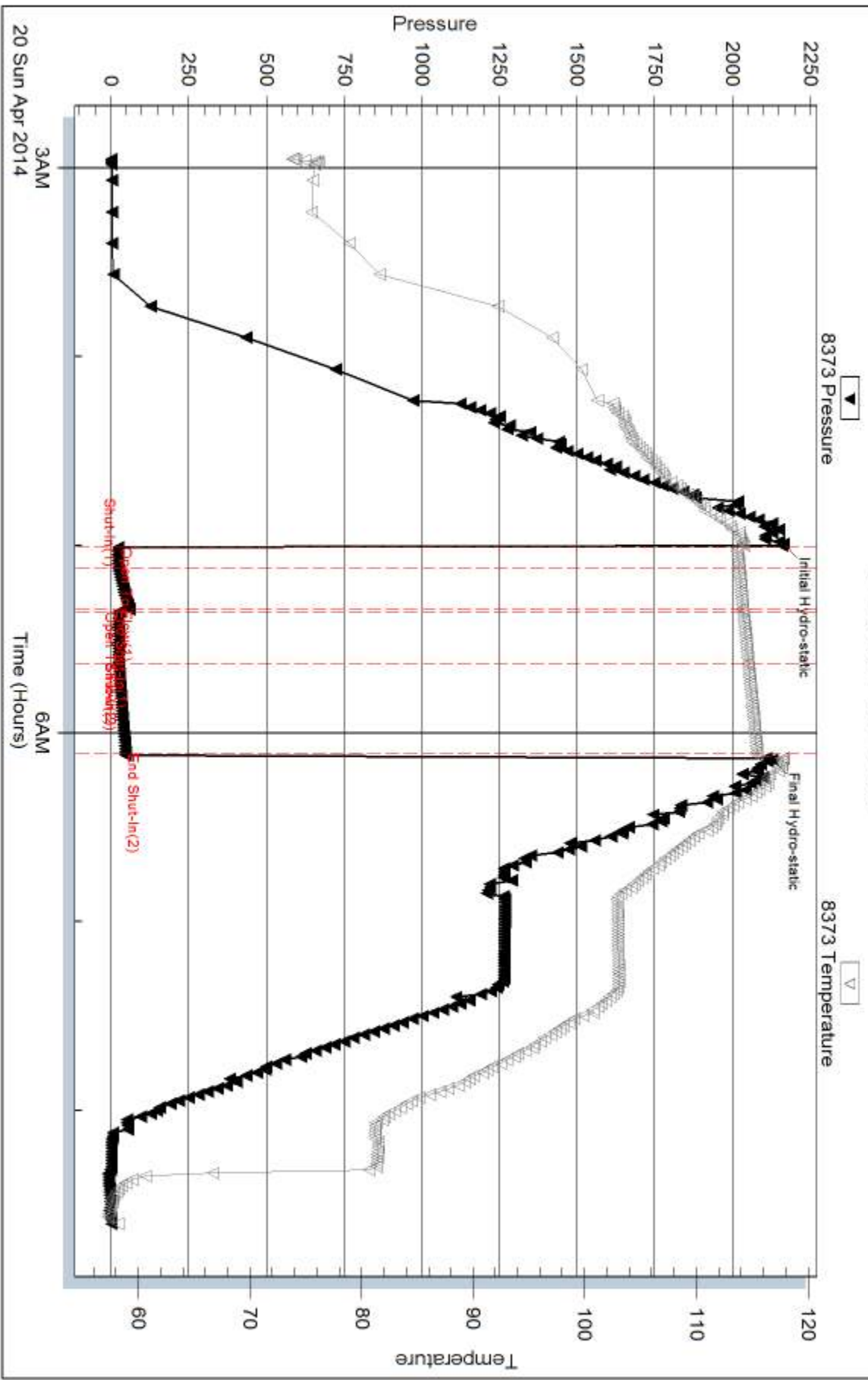
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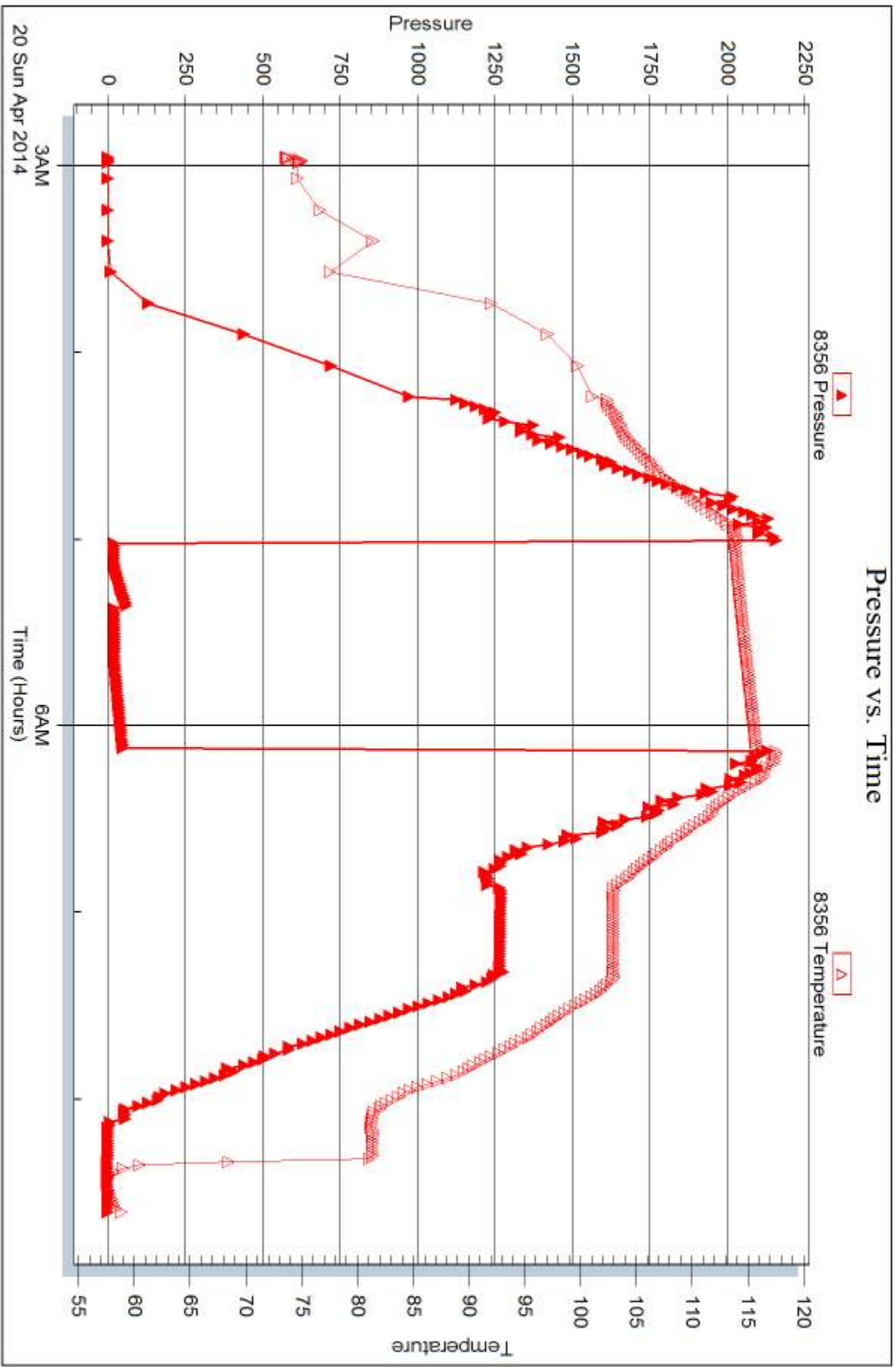
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.21 @ 03:12:15

End Date: 2014.04.21 @ 09:09:15

Job Ticket #: 55745 DST #: 7

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

Printed: 2014.04.24 @ 14:27:55



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55745

DST#: 7

Test Start: 2014.04.21 @ 03:12:15

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:25:45
 Time Test Ended: 09:09:15

Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60

Interval: **4442.00 ft (KB) To 4585.00 ft (KB) (TVD)**
 Total Depth: 4585.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8373

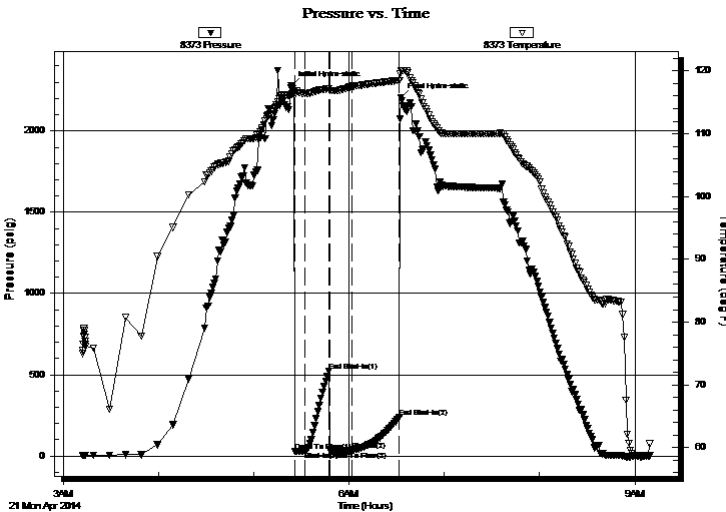
Inside

Press@RunDepth: 32.24 psig @ 4443.00 ft (KB)
 Start Date: 2014.04.21 End Date: 2014.04.21
 Start Time: 03:12:20 End Time: 09:09:14

Capacity: 8000.00 psig
 Last Calib.: 2014.04.21
 Time On Btm: 2014.04.21 @ 05:23:45
 Time Off Btm: 2014.04.21 @ 06:32:45

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

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2279.31	116.27	Initial Hydro-static
2	28.01	116.04	Open To Flow (1)
9	28.81	116.36	Shut-In(1)
24	523.59	117.16	End Shut-In(1)
24	30.43	116.87	Open To Flow (2)
38	32.24	117.57	Shut-In(2)
68	240.30	118.52	End Shut-In(2)
69	2206.21	120.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100% m	0.05

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55745

DST#: 7

Test Start: 2014.04.21 @ 03:12:15

GENERAL INFORMATION:

Formation: Cherokee			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)	
Time Tool Opened: 05:25:45		Tester: Brandon Turley	
Time Test Ended: 09:09:15		Unit No: 60	
Interval: 4442.00 ft (KB) To 4585.00 ft (KB) (TVD)		Reference Elevations: 2752.00 ft (KB)	
Total Depth: 4585.00 ft (KB) (TVD)		2745.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Good	KB to GR/CF: 7.00 ft	

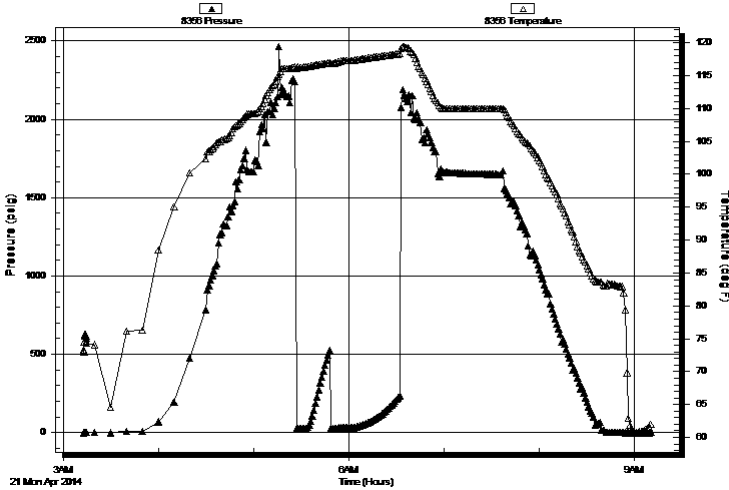
Serial #: 8356

Outside

Press@RunDepth: psig @ 4443.00 ft (KB)	Capacity: 8000.00 psig	
Start Date: 2014.04.21	End Date: 2014.04.21	Last Calib.: 2014.04.21
Start Time: 03:13:01	End Time: 09:09:55	Time On Btm:
		Time Off Btm:

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

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%m	0.05

* 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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55745

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.04.21 @ 03:12:15

Tool Information

Drill Pipe:	Length: 4294.00 ft	Diameter: 3.80 inches	Volume: 60.23 bbl	Tool Weight: 2000.00 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: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 60.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4442.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	143.00 ft			
Tool Length:	171.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4415.00	
Shut In Tool	5.00			4420.00	
Hydraulic tool	5.00			4425.00	
Jars	5.00			4430.00	
Safety Joint	3.00			4433.00	
Packer	5.00			4438.00	28.00 Bottom Of Top Packer
Packer	4.00			4442.00	
Stubb	1.00			4443.00	
Recorder	0.00	8373	Inside	4443.00	
Recorder	0.00	8356	Outside	4443.00	
Perforations	11.00			4454.00	
Change Over Sub	1.00			4455.00	
Drill Pipe	124.00			4579.00	
Change Over Sub	1.00			4580.00	
Bullnose	5.00			4585.00	143.00 Bottom Packers & Anchor

Total Tool Length: 171.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55745

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.04.21 @ 03:12:15

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

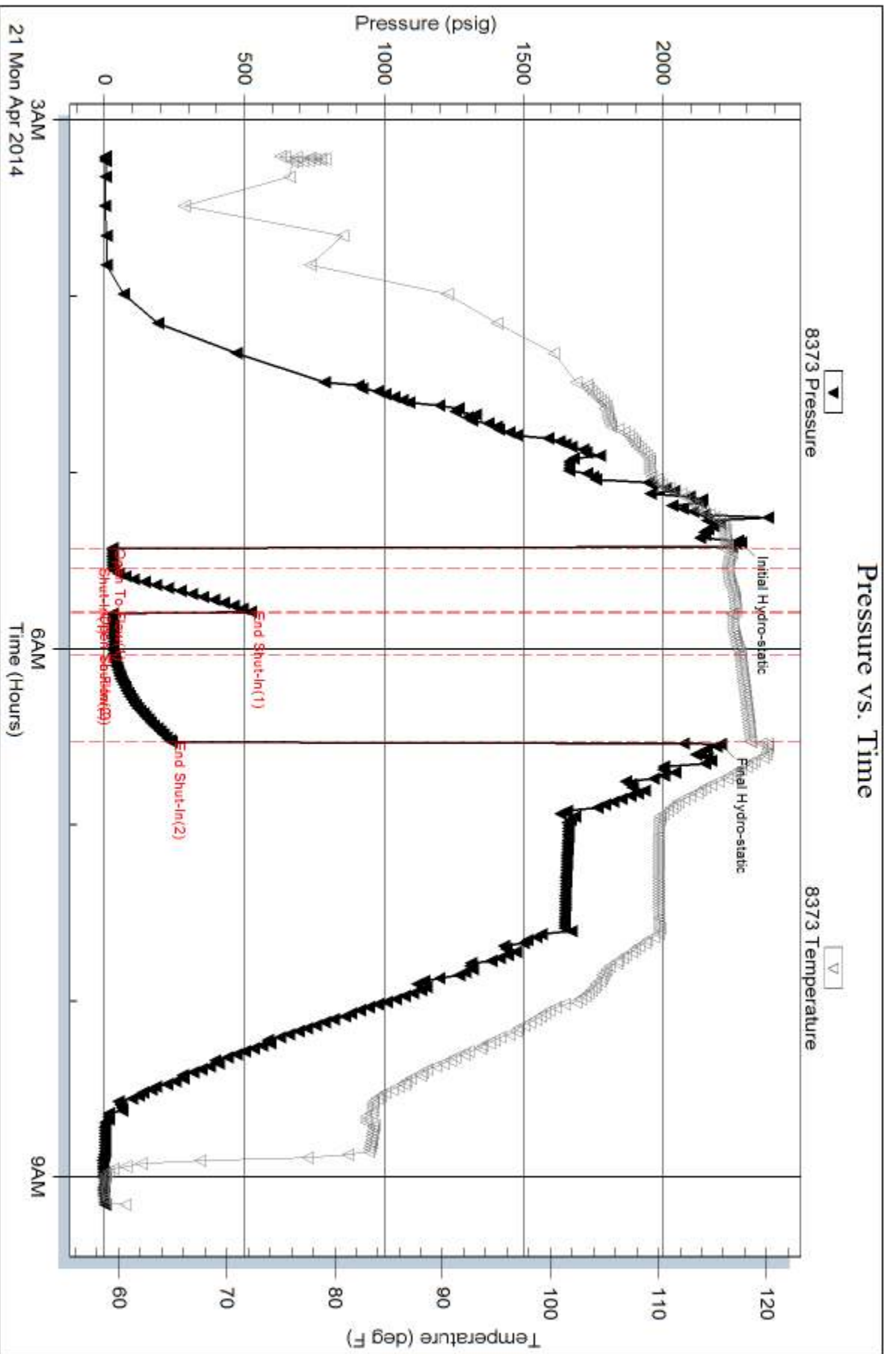
Num Gas Bombs: 0

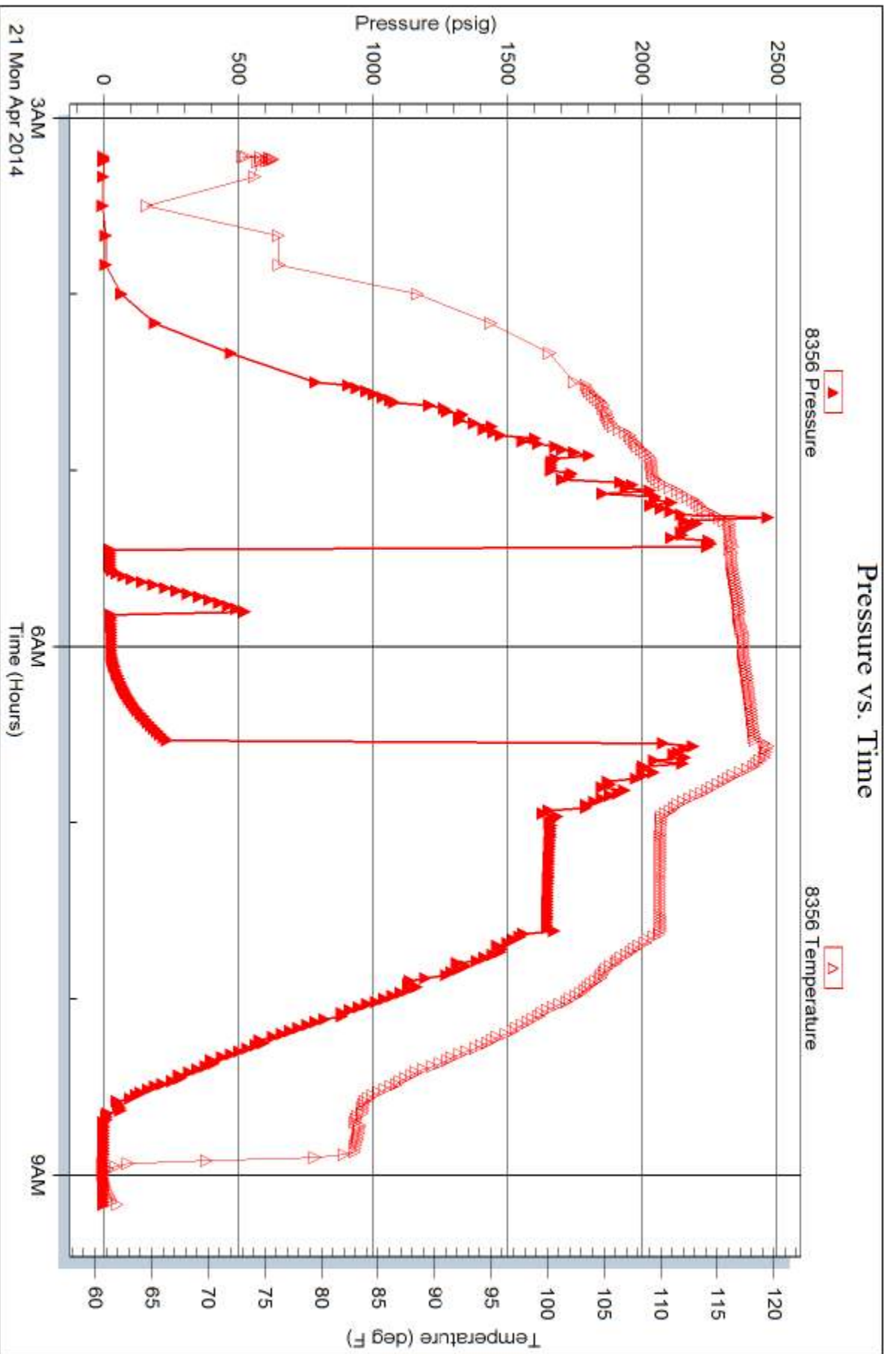
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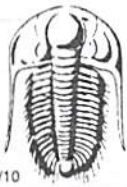
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55739

Well Name & No. RH "A" Unit 1-33 Test No. 1 Date 4-16-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address 562 W State Rd 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig 4D #3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Lane State KS

Interval Tested 4154 4180 Zone Tested H
 Anchor Length 26 Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 4149 Drill Collars Run 125 Vis 52
 Bottom Packer Depth 4154 Wt. Pipe Run _____ WL 7.2
 Total Depth 4180 Chlorides 2800 ppm System LCM 4

Blow Description FF! Weak surface blow.
FS! No return.
FF! No blow.
FS! No return.

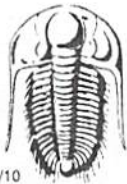
Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>mud oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2 BHT 114 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2133 Test 1250 T-On Location 13:15
 (B) First Initial Flow 31 Jars 250 T-Started 13:50
 (C) First Final Flow 37 Safety Joint 75 T-Open 15:44
 (D) Initial Shut-In 912 Circ Sub NIC T-Pulled 16:49
 (E) Second Initial Flow 30 Hourly Standby _____ T-Out 18:20
 (F) Second Final Flow 32 Mileage 56 86.80 Comments _____
 (G) Final Shut-In 952 Sampler _____
 (H) Final Hydrostatic 2048 Straddle _____

Initial Open 5 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 15 Extra Packer _____ Ruined Packer _____
 Final Flow 15 Extra Recorder _____ Sub Total 0
 Final Shut-In 30 Day Standby _____ Total 1661.80
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1661.80

Approved By Vern Schrag 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. 55740

Well Name & No. RH "A" unit 1-33 Test No. 2 Date 4-17-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Lane State KS

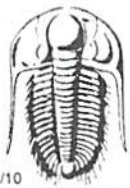
Interval Tested 4222 4241 Zone Tested J
 Anchor Length _____ Drill Pipe Run _____ Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 125 Vis 53
 Bottom Packer Depth 4222 Wt. Pipe Run _____ WL 7.2
 Total Depth 4241 Chlorides 2800 ppm System LCM 4
 Blow Description IF: Weak blow built to 1 1/4 in 5 min,
FS: No return.
FF: 1/4 blow built to 3 in 15 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>30</u>	<u>ocm</u>	<u>30</u>	<u>0</u>	<u>70</u>	<u>0</u>
<u>62</u>	<u>ocm</u>	<u>5</u>	<u>0</u>	<u>95</u>	<u>0</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 93 BHT 119 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic	<u>2147</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>5:15</u>
(B) First Initial Flow	<u>36</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>5:29</u>
(C) First Final Flow	<u>45</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>7:05</u>
(D) Initial Shut-In	<u>583</u>	<input checked="" type="checkbox"/> Circ Sub	<u>NIL</u>	T-Pulled	<u>8:10</u>
(E) Second Initial Flow	<u>48</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>10:00</u>
(F) Second Final Flow	<u>78</u>	<input checked="" type="checkbox"/> Mileage	<u>56</u> 86.80	Comments	
(G) Final Shut-In	<u>582</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2076</u>	<input type="checkbox"/> Straddle		<input type="checkbox"/> Ruined Shale Packer	
		<input type="checkbox"/> Shale Packer		<input type="checkbox"/> Ruined Packer	
Initial Open	<u>5</u>	<input type="checkbox"/> Extra Packer		<input type="checkbox"/> Extra Copies	
Initial Shut-In	<u>15</u>	<input type="checkbox"/> Extra Recorder		Sub Total	<u>0</u>
Final Flow	<u>15</u>	<input type="checkbox"/> Day Standby		Total	<u>1661.80</u>
Final Shut-In	<u>30</u>	<input type="checkbox"/> Accessibility		MP/DST Disc't	
		Sub Total	<u>1661.80</u>		

Approved By Vern Schrag 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. 55741

Well Name & No. RH 'A' Unit 1-33 Test No. 3 Date 4-17-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Line State KS

Interval Tested 4254 4265 Zone Tested K
 Anchor Length _____ Drill Pipe Run 4132 Mud Wt. 9.2
 Top Packer Depth 4249 Drill Collars Run 125 Vis 51
 Bottom Packer Depth 4254 Wt. Pipe Run _____ WL 7.6
 Total Depth 4265 Chlorides 3000 ppm System LCM 4

Blow Description IF: Weak surface blow.
IS: No return.
EF: Surface blow built to 1 in 30 min.
FS: No return.

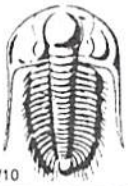
Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Free oil</u>	<u>100</u>			
<u>5</u>	<u>ocm</u>	<u>10</u>		<u>90</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 7 BHT 114 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2158 Test 1250 T-On Location 17:45
 (B) First Initial Flow 32 Jars 250 T-Started 17:54
 (C) First Final Flow 39 Safety Joint 75 T-Open 19:34
 (D) Initial Shut-In 584 Circ Sub NIL T-Pulled 21:25
 (E) Second Initial Flow 29 Hourly Standby T-Out 23:00
 (F) Second Final Flow 30 Mileage 56- 86.80 Comments _____
 (G) Final Shut-In 600 Sampler _____
 (H) Final Hydrostatic 2152 Straddle _____

Initial Open 5 Ruined Shale Packer _____
 Initial Shut-In 15 Ruined Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 60 Extra Recorder _____
 Sub Total 0
 Total 1661.80
 MP/DST Disc't _____

Approved By Vern C Schrag Our Representative [Signature]
 TriLOBITE TESTING Inc. shall not be liable for damaged or 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. 55742

Well Name & No. RH A unit 1-33 Test No. 4 Date 4-18-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HP #3
 Location: Sec. 33 Twp. 18^s Rge. 28^w Co. Lane State KS

Interval Tested 4252 4270 Zone Tested K
 Anchor Length _____ Drill Pipe Run 4104 Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 125 Vis 51
 Bottom Packer Depth 4252 Wt. Pipe Run _____ WL 7.6
 Total Depth 4270 Chlorides 3060 ppm System LCM 4
 Blow Description IF: surface blow built to 1/4,
IS: No return,
FF: surface blow built to 1/2.
FS: No return,

Rec	Feet of	%gas	%oil	%water	%mud
<u>7</u>	<u>0CM</u>	<u>30</u>		<u>70</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

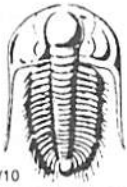
Rec Total 7 BHT 108 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2119 Test 1250 T-On Location 5:40
 (B) First Initial Flow 31 Jars 250 T-Started 6:08
 (C) First Final Flow 31 Safety Joint 75 T-Open 8:10
 (D) Initial Shut-In 528 Circ Sub N/C T-Pulled 9:15
 (E) Second Initial Flow 30 Hourly Standby _____ T-Out 10:50
 (F) Second Final Flow 32 Mileage 56 - 86.80 Comments _____
 (G) Final Shut-In 561 Sampler _____
 (H) Final Hydrostatic 2087 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1661.80 Total 1661.80 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. 55743

Well Name & No. RH A Unit 1-33 Test No. 5 Date 4-18-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. T8S Rge. R8W Co. Lane State K5

Interval Tested 4288 4296 Zone Tested L
 Anchor Length _____ Drill Pipe Run 4165 Mud Wt. 9.3
 Top Packer Depth _____ Drill Collars Run 125 Vis 49
 Bottom Packer Depth 4288 Wt. Pipe Run _____ WL 7.6
 Total Depth 4296 Chlorides 2800 ppm System LCM 3

Blow Description IF: BoB in 30 sec.
IS: BoB in 12 min.
FK: BoB in 1 min.
FS: BoB in 15 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>620</u>	<u>90</u>	<u>40</u>	<u>60</u>		
<u>434</u>	<u>90</u>	<u>20</u>	<u>80</u>		
<u>62</u>	<u>mc90</u>	<u>60</u>	<u>20</u>		<u>20</u>
	<u>1178 GIP</u>				

Rec Total 1116 BHT 132 Gravity 37 API RW _____ @ _____ °F Chlorides _____ ppm

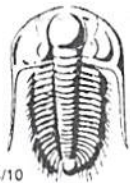
(A) Initial Hydrostatic 2125 Test 1250 T-On Location 23:50
 (B) First Initial Flow 154 Jars 250 T-Started 00:12
 (C) First Final Flow 220 Safety Joint 75 T-Open 2:07
 (D) Initial Shut-In 786 Circ Sub NIL T-Pulled 3:12
 (E) Second Initial Flow 240 Hourly Standby _____ T-Out 6:45
 (F) Second Final Flow 428 Mileage 56- 86.80 Comments _____
 (G) Final Shut-In 759 Sampler _____
 (H) Final Hydrostatic 2098 Straddle _____
 Shale Packer _____
 Ruined Shale Packer _____
 Extra Packer _____
 Ruined Packer _____
 Extra Recorder _____
 Extra Copies _____

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

Sub Total 1661.80

Approved By Vern C. Schrag 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. 55744

Well Name & No. RH A Unit 1-33 Test No. 6 Date 4-20-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. 18^S Rge. 28^W Co. Lane State K5

Interval Tested 4331 4440 Zone Tested Marmaton
 Anchor Length _____ Drill Pipe Run 4198 Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 125 Vis 61
 Bottom Packer Depth _____ Wt. Pipe Run _____ WL 6.8
 Total Depth 4440 Chlorides 2200 ppm System LCM 3

Blow Description FF: 1/4 blow built to 1/2,
IS: No return.
FF: surface blow never built,
FS: No return.

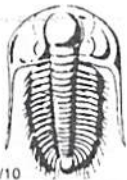
Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>mud oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 115 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2162</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:25</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2:57</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:00</u>
(D) Initial Shut-In <u>59</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIL</u>	T-Pulled <u>6:05</u>
(E) Second Initial Flow <u>25</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>8:35</u>
(F) Second Final Flow <u>2125</u>	<input checked="" type="checkbox"/> Mileage <u>56-86.80</u>	Comments _____
(G) Final Shut-In <u>47</u>	<input type="checkbox"/> Sampler	_____
(H) Final Hydrostatic <u>2128</u>	<input type="checkbox"/> Straddle	_____
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Initial Open <u>5</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
Initial Shut-In <u>15</u>	<input type="checkbox"/> Accessibility	Total <u>1911.80</u>
Final Flow <u>15</u>	Sub Total <u>1911.80</u>	MP/DST Disc't _____
Final Shut-In <u>30</u>		

Approved By [Signature] Our Representative [Signature]

Trilobite Testing Inc. shall not be held liable for damaged of any kind of the 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, 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. 55745

Well Name & No. RH A unit 1-33 Test No. 7 Date 4-21
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Lane State KS

Interval Tested 4442 4585 Zone Tested Cherokee
 Anchor Length _____ Drill Pipe Run 4294 Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 125 Vis 58
 Bottom Packer Depth 4442 Wt. Pipe Run _____ WL 7.6
 Total Depth 4585 Chlorides 2000 ppm System LCM 3

Blow Description IF: 1/2 blow built to 1,
IS: No return.
FF: No blow.
FS: No return.

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

Rec Total 10 BHT 118 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2279</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:45</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:12</u>
(C) First Final Flow <u>28</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:26</u>
(D) Initial Shut-In <u>523</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIL</u>	T-Pulled <u>6:31</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>9:10</u>
(F) Second Final Flow <u>32</u>	<input checked="" type="checkbox"/> Mileage <u>56 -</u> 86.80	Comments _____
(G) Final Shut-In <u>240</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2206</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>5</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1911.80</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1911.80</u>	

Approved By Vern Schrag Our Representative [Signature]

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