



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.04.28 @ 18:18:15

End Date: 2014.04.28 @ 21:26:45

Job Ticket #: 56440 DST #: 1

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

Printed: 2014.05.05 @ 10:25:23

Larson Engineering
28-18s-28w
Hineman Unit 1 28
DST # 1
H
2014.04.28



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56440

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.28 @ 18:18:15

GENERAL INFORMATION:

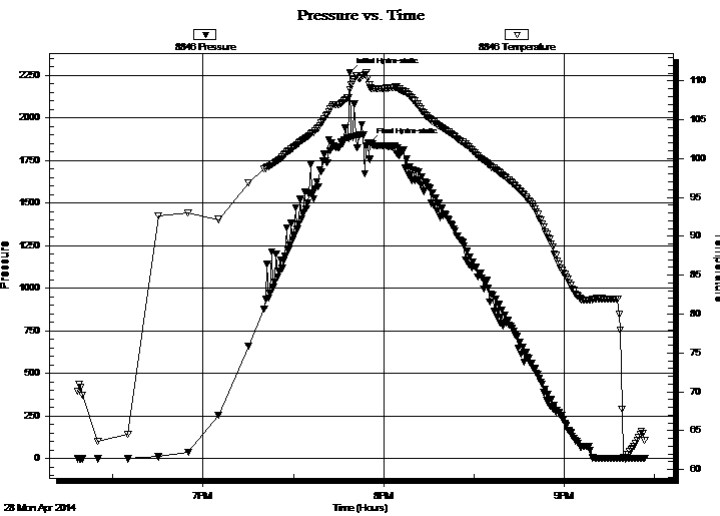
Formation: **H**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened:
 Time Test Ended: 21:26:45
 Interval: **4127.00 ft (KB) To 4150.00 ft (KB) (TVD)**
 Total Depth: 4150.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2722.00 ft (KB)
 2715.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8846

Inside

Press@RunDepth: psig @ 4145.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.28 End Date: 2014.04.28 Last Calib.: 2014.04.28
 Start Time: 18:18:15 End Time: 21:26:45 Time On Btm: 2014.04.28 @ 19:48:45
 Time Off Btm: 2014.04.28 @ 19:55:30

TEST COMMENT: IF: Hit Bridge 5 stds off bottom
 IS:
 FF:
 FS:



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2266.45	108.89	Initial Hydro-static
7	1855.75	109.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56440

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.28 @ 18:18:15

Tool Information

Drill Pipe:	Length: 3984.00 ft	Diameter: 3.80 inches	Volume: 55.89 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:	lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: 56.49 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	4127.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	23.00 ft				
Tool Length:	51.00 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			4100.00	
Shut In Tool	5.00			4105.00	
Hydraulic tool	5.00			4110.00	
Jars	5.00			4115.00	
Safety Joint	3.00			4118.00	
Packer	5.00			4123.00	28.00 Bottom Of Top Packer
Packer	4.00			4127.00	
Stubb	1.00			4128.00	
Perforations	17.00			4145.00	
Recorder	0.00	8846	Inside	4145.00	
Recorder	0.00	8737	Outside	4145.00	
Bullnose	5.00			4150.00	23.00 Bottom Packers & Anchor

Total Tool Length: 51.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56440

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.28 @ 18:18:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.11 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

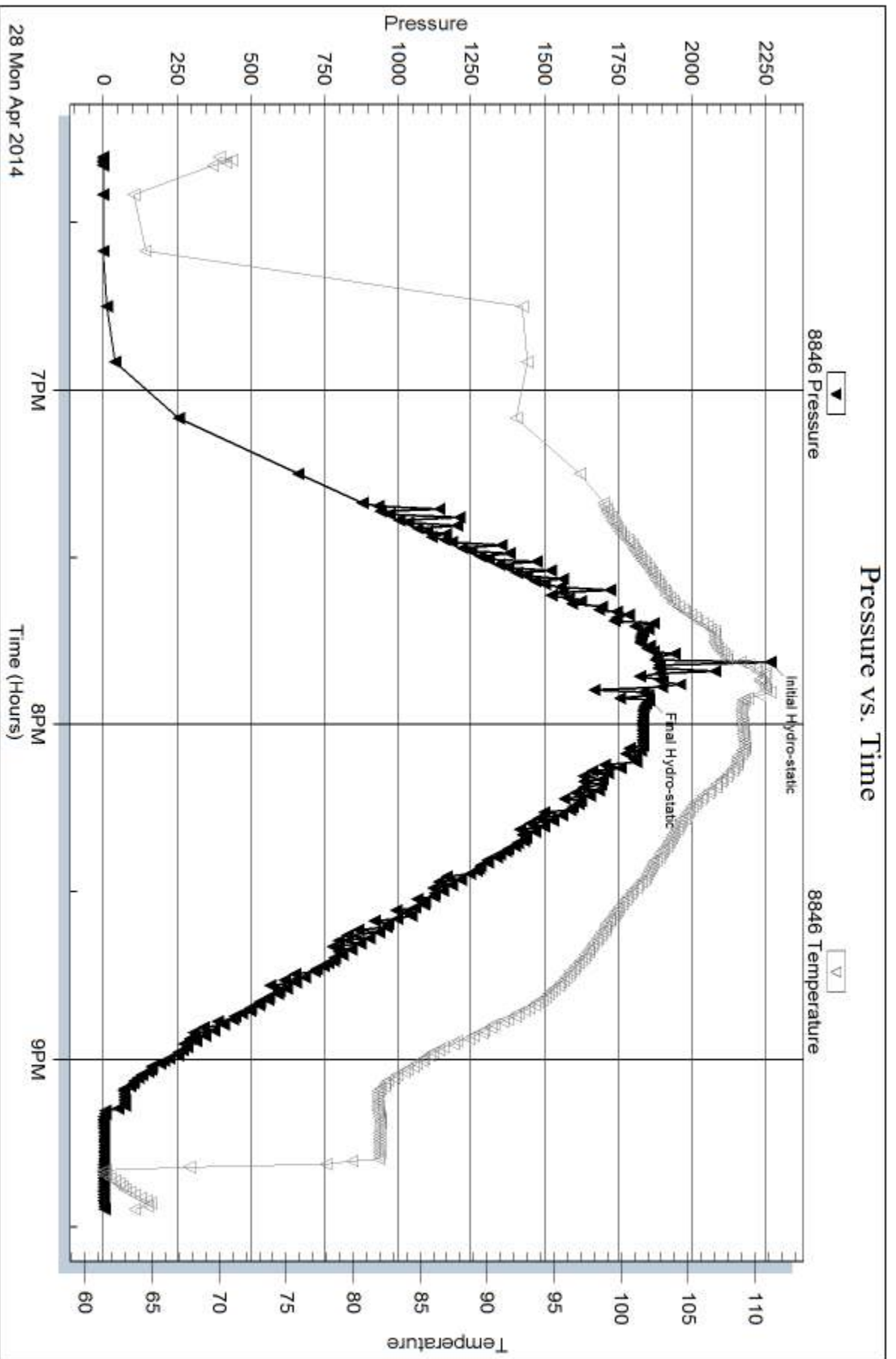
Length ft	Description	Volume bbbl

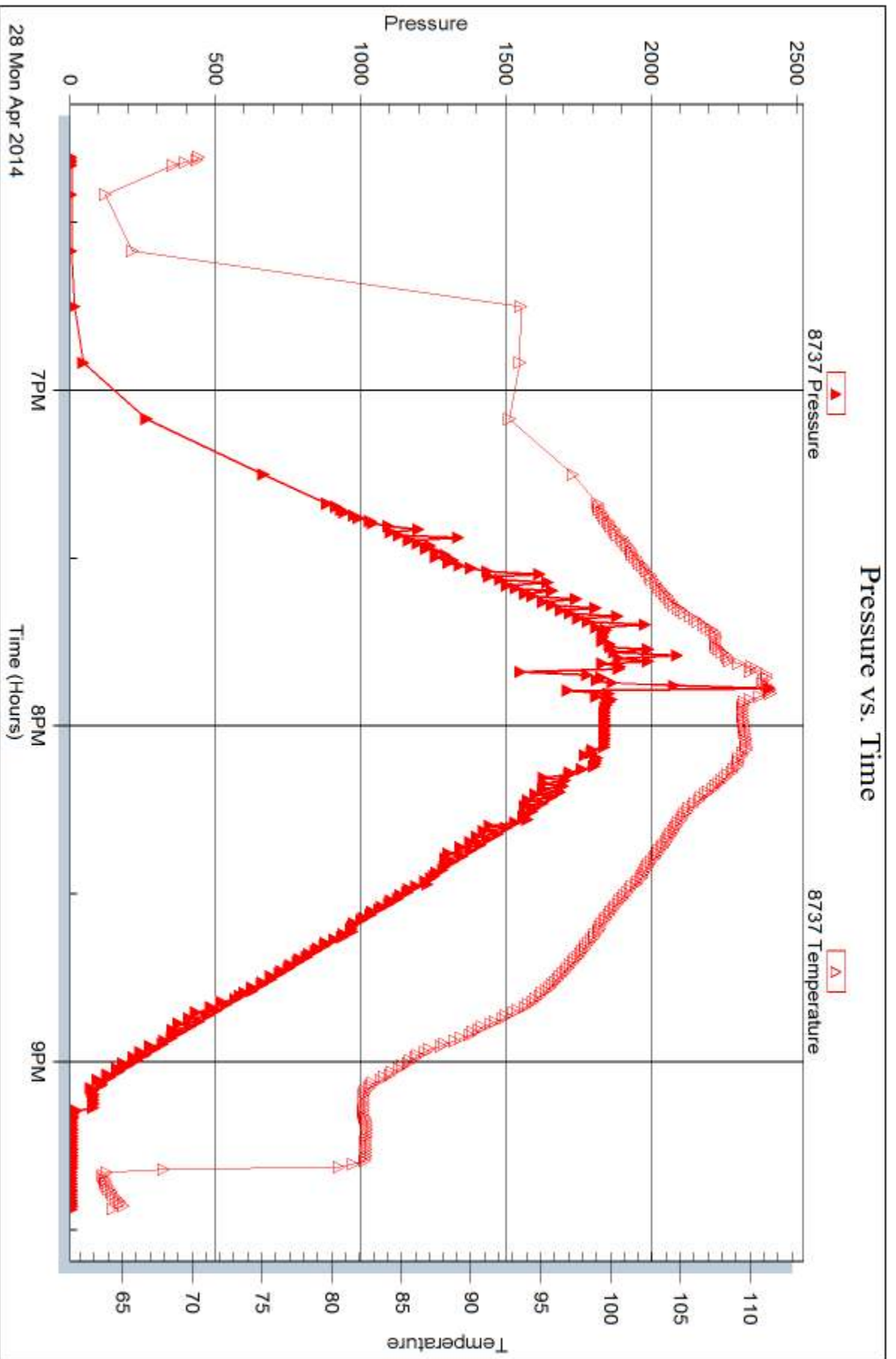
Total Length: ft Total Volume: bbl

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.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.04.29 @ 03:38:15

End Date: 2014.04.29 @ 09:09:00

Job Ticket #: 56441 DST #: 2

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

Printed: 2014.05.05 @ 10:25:01

Larson Engineering
28-18s-28w
Hineman Unit 1 28
DST # 2
H
2014.04.29



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56441

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.04.29 @ 03:38:15

GENERAL INFORMATION:

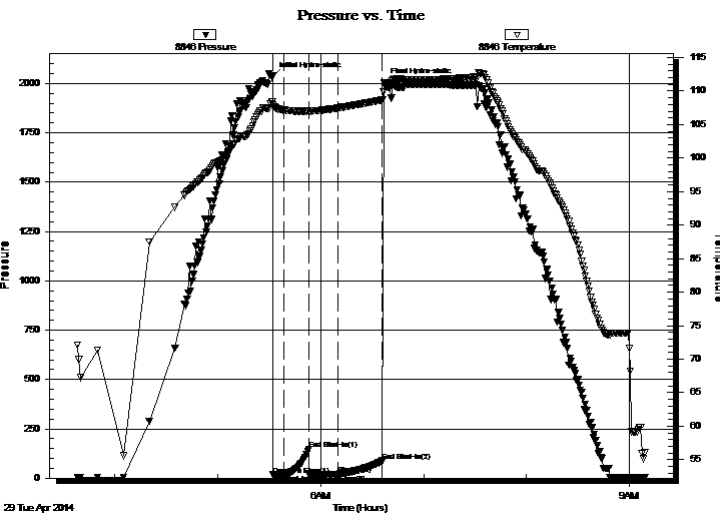
Formation: **H**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:32:15
 Time Test Ended: 09:09:00
 Interval: **4127.00 ft (KB) To 4150.00 ft (KB) (TVD)**
 Total Depth: 4150.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2722.00 ft (KB)
 2715.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8846

Inside

Press@RunDepth: 20.35 psig @ 4145.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.29 End Date: 2014.04.29 Last Calib.: 2014.04.29
 Start Time: 03:38:15 End Time: 09:09:00 Time On Btm: 2014.04.29 @ 05:32:00
 Time Off Btm: 2014.04.29 @ 06:36:45

TEST COMMENT: IF: Built to weak surface blow
 IS: No return blow
 FF: Weak surface blow that died in 8 min
 FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2037.51	108.43	Initial Hydro-static
1	16.84	107.91	Open To Flow (1)
7	17.65	107.16	Shut-In(1)
21	146.19	107.03	End Shut-In(1)
22	17.46	106.98	Open To Flow (2)
38	20.35	107.48	Shut-In(2)
64	87.36	108.68	End Shut-In(2)
65	2005.93	109.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56441

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.04.29 @ 03:38:15

Tool Information

Drill Pipe:	Length: 3984.00 ft	Diameter: 3.80 inches	Volume: 55.89 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 56.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4127.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	51.00 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			4100.00	
Shut In Tool	5.00			4105.00	
Hydraulic tool	5.00			4110.00	
Jars	5.00			4115.00	
Safety Joint	3.00			4118.00	
Packer	5.00			4123.00	28.00 Bottom Of Top Packer
Packer	4.00			4127.00	
Stubb	1.00			4128.00	
Perforations	17.00			4145.00	
Recorder	0.00	8846	Inside	4145.00	
Recorder	0.00	8737	Outside	4145.00	
Bullnose	5.00			4150.00	23.00 Bottom Packers & Anchor

Total Tool Length: 51.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56441

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.04.29 @ 03:38:15

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: 60.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.12 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	mud 100%m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

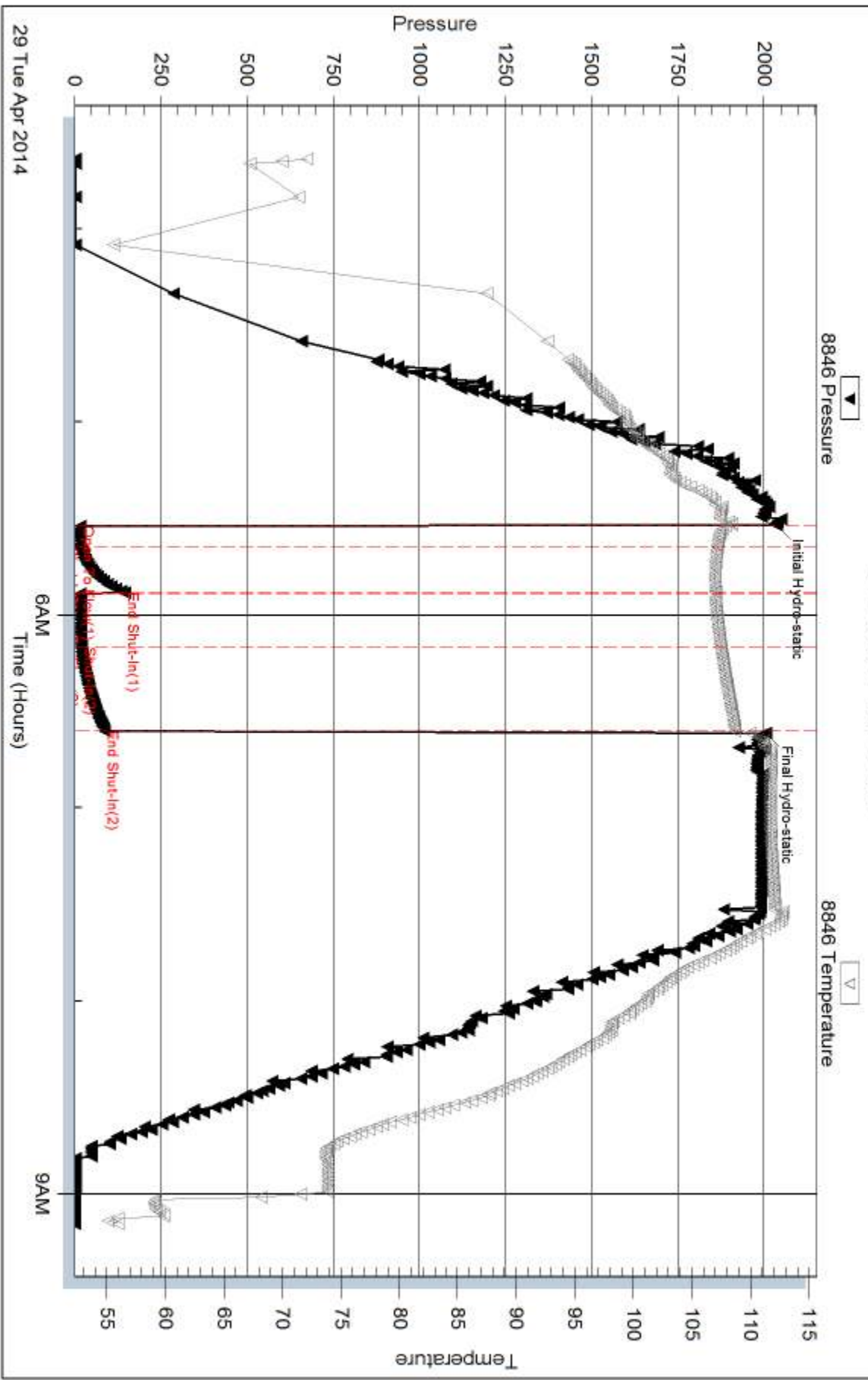
Serial #:

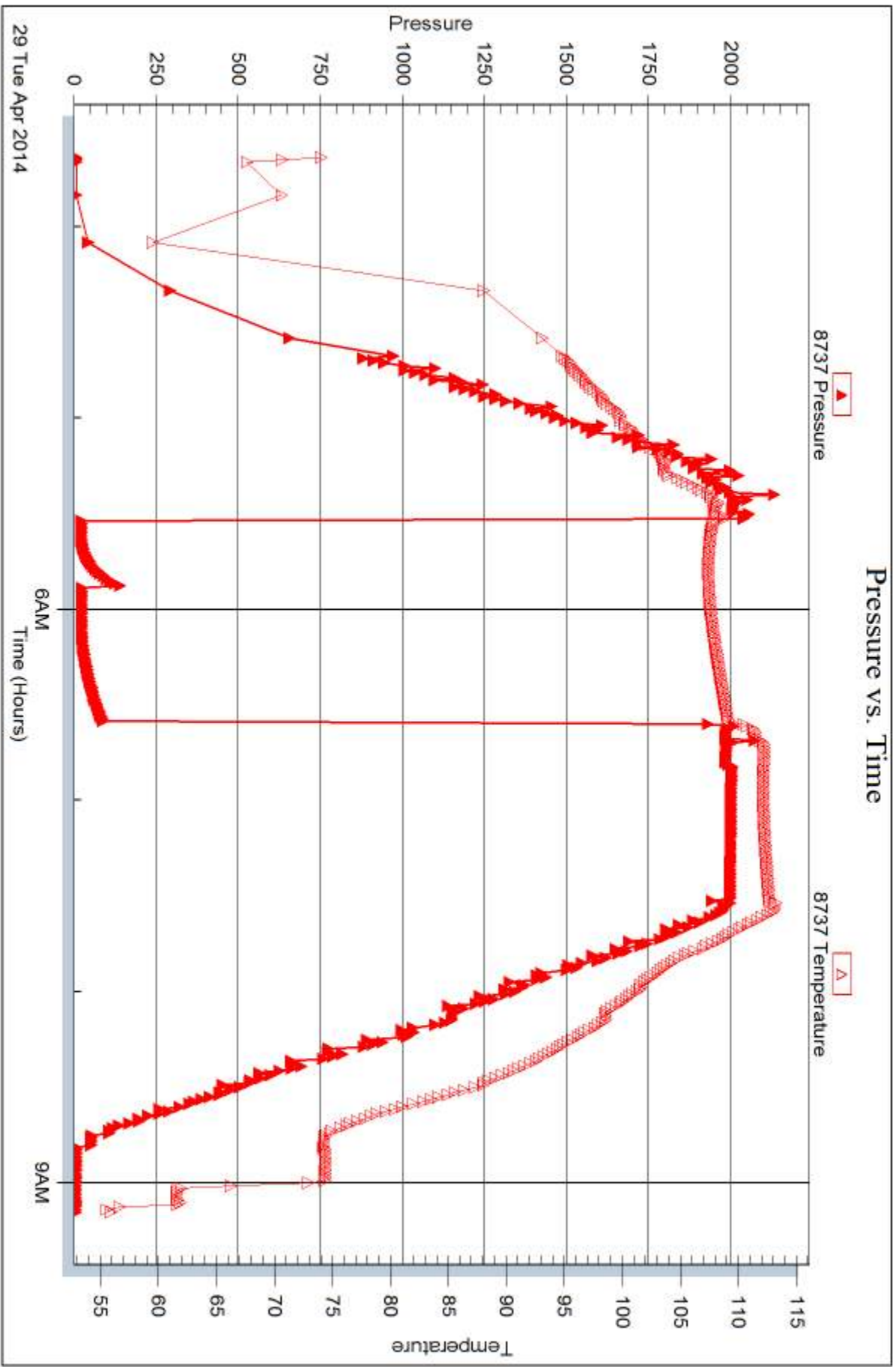
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.04.30 @ 00:41:15

End Date: 2014.04.30 @ 05:07:30

Job Ticket #: 56442 DST #: 3

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

Printed: 2014.05.05 @ 10:24:38



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56442

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 00:41:15

GENERAL INFORMATION:

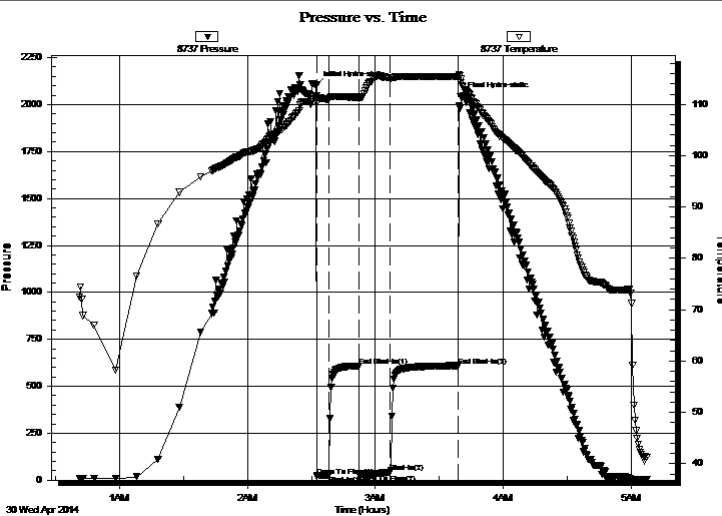
Formation: **K**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:32:30
 Time Test Ended: 05:07:30
 Interval: **4229.00 ft (KB) To 4243.00 ft (KB) (TVD)**
 Total Depth: 4243.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2722.00 ft (KB)
 2715.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8737

Outside

Press@RunDepth: 41.41 psig @ 4238.00 ft (KB)
 Start Date: 2014.04.30 End Date: 2014.04.30
 Start Time: 00:41:15 End Time: 05:07:30
 Capacity: 8000.00 psig
 Last Calib.: 2014.04.30
 Time On Btm: 2014.04.30 @ 02:32:15
 Time Off Btm: 2014.04.30 @ 03:40:00

TEST COMMENT: IF: Built to 1/8" blow
 IS: No return blow
 FF: Built to weak surface blow
 FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2099.56	111.69	Initial Hydro-static
1	21.42	110.18	Open To Flow (1)
6	27.60	111.01	Shut-In(1)
20	608.80	111.40	End Shut-In(1)
21	29.06	111.17	Open To Flow (2)
35	41.41	115.15	Shut-In(2)
67	609.51	115.38	End Shut-In(2)
68	2041.26	114.94	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mud with a slight show of oil	0.15

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56442

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 00:41:15

GENERAL INFORMATION:

Formation: **K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:32:30

Time Test Ended: 05:07:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: 4229.00 ft (KB) To 4243.00 ft (KB) (TVD)

Reference Elevations: 2722.00 ft (KB)

Total Depth: 4243.00 ft (KB) (TVD)

2715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8846

Inside

Press@RunDepth: psig @ 4238.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.30

End Date:

2014.04.30

Last Calib.:

2014.04.30

Start Time: 00:41:15

End Time:

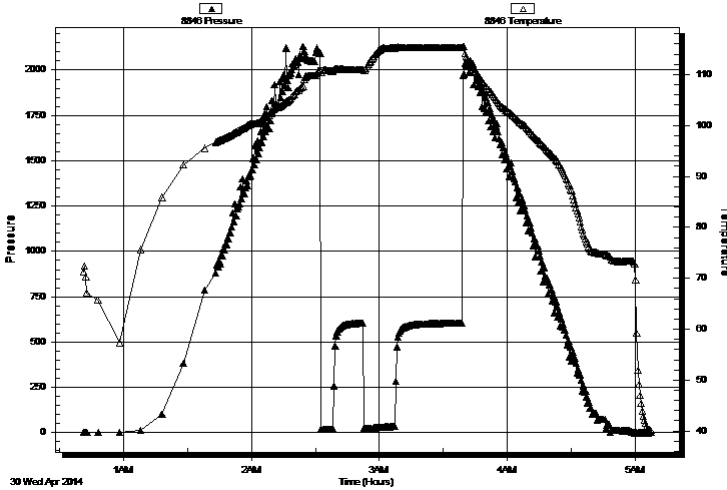
05:07:30

Time On Btm:

Time Off Btm:

TEST COMMENT: IF:Built to 1/8" blow
IS:No return blow
FF:Built to weak surface blow
FS:No return blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mud with a slight show of oil	0.15

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56442

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 00:41:15

Tool Information

Drill Pipe:	Length: 4108.00 ft	Diameter: 3.80 inches	Volume: 57.62 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.22 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	4229.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	14.00 ft			
Tool Length:	42.00 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			4202.00	
Shut In Tool	5.00			4207.00	
Hydraulic tool	5.00			4212.00	
Jars	5.00			4217.00	
Safety Joint	3.00			4220.00	
Packer	5.00			4225.00	28.00 Bottom Of Top Packer
Packer	4.00			4229.00	
Stubb	1.00			4230.00	
Perforations	8.00			4238.00	
Recorder	0.00	8846	Inside	4238.00	
Recorder	0.00	8737	Outside	4238.00	
Bullnose	5.00			4243.00	14.00 Bottom Packers & Anchor

Total Tool Length: 42.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56442

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 00:41:15

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: 86.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.94 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
30.00	mud w ith a slight show of oil	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

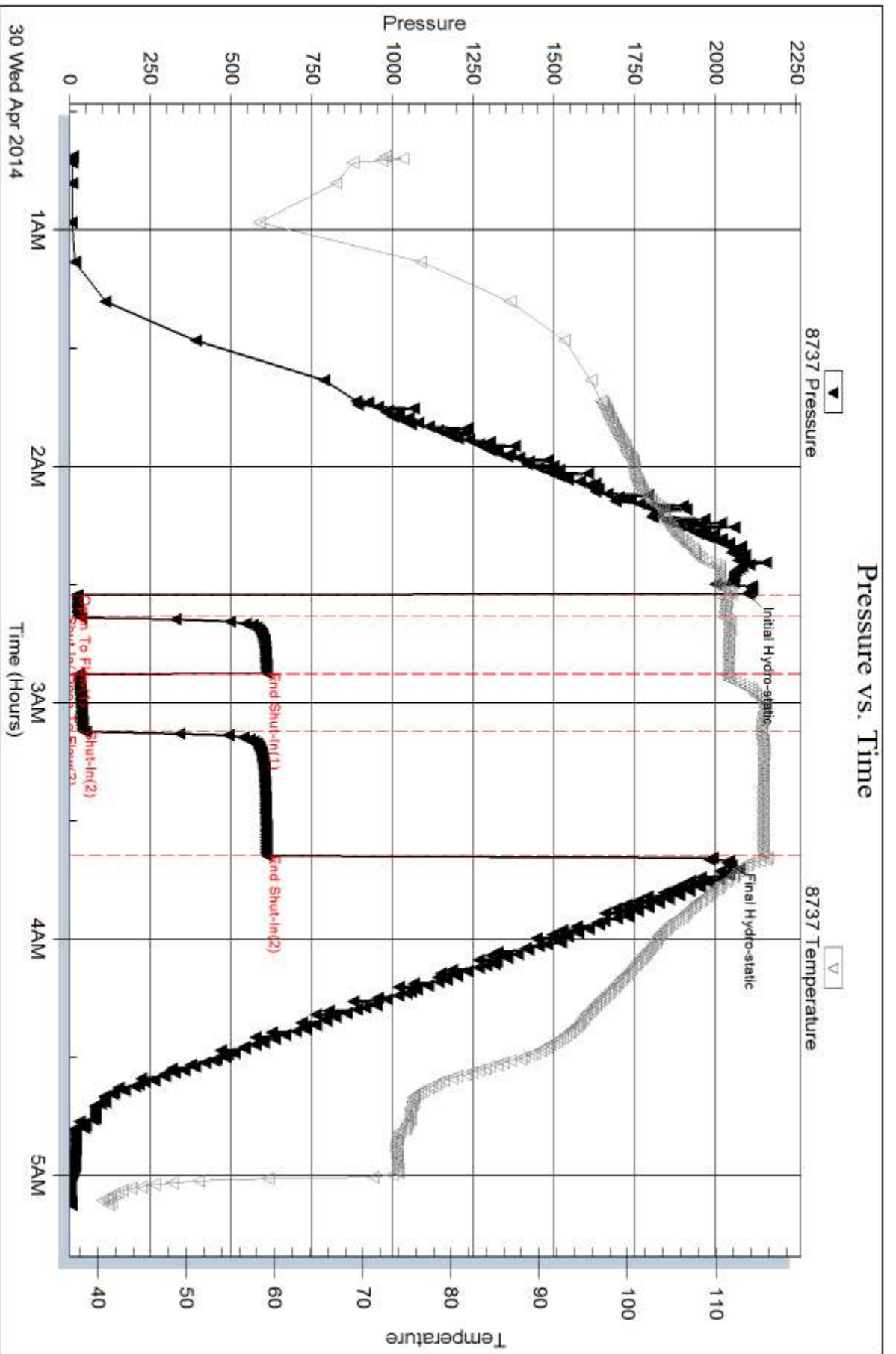
Num Gas Bombs: 0

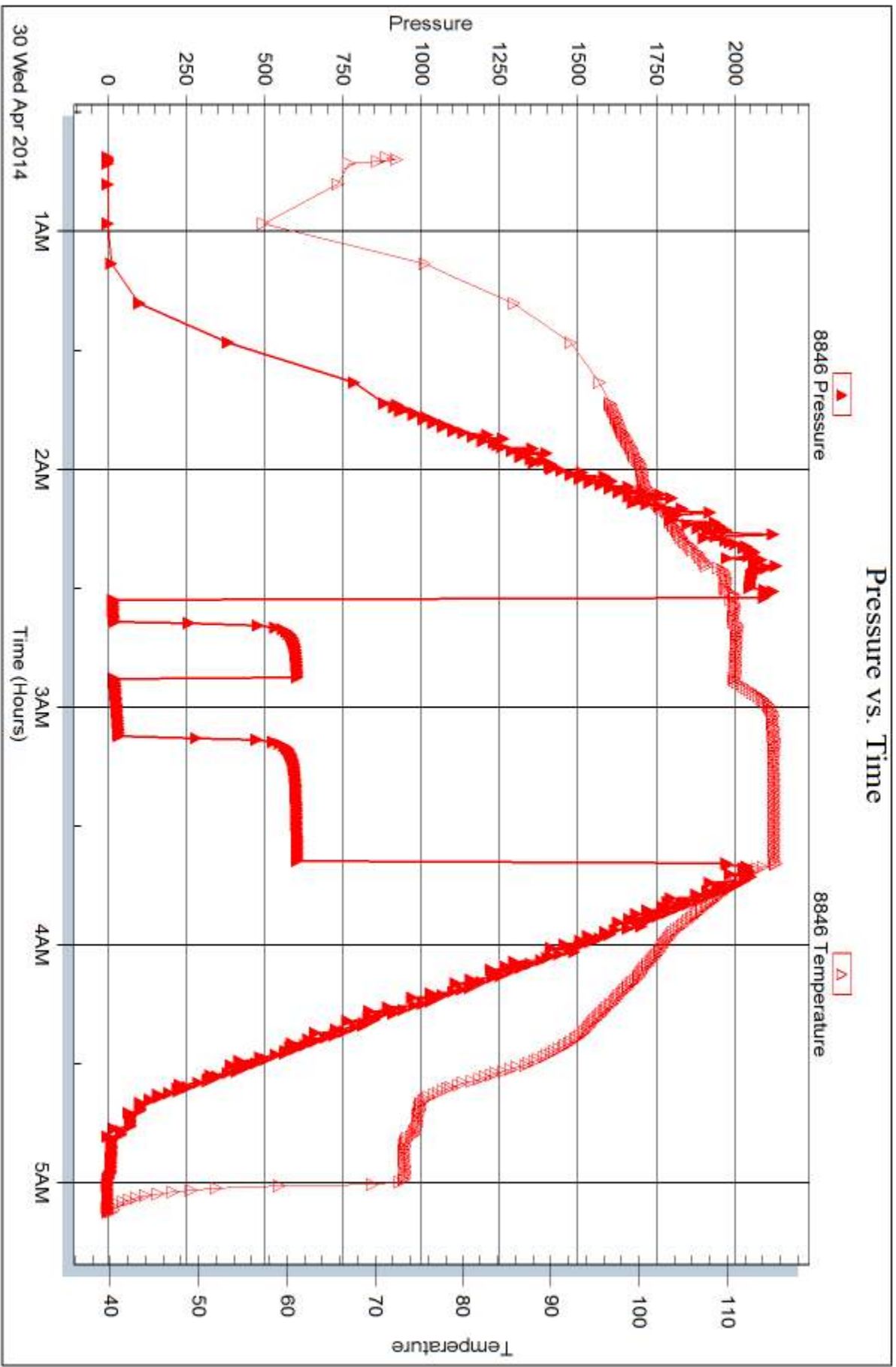
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.04.30 @ 15:30:15

End Date: 2014.04.30 @ 20:13:15

Job Ticket #: 56443 DST #: 4

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

Printed: 2014.05.05 @ 10:24:16

Larson Engineering
28-18s-28w
Hineman Unit 1 28
DST # 4
L
2014.04.30



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56443

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 15:30:15

GENERAL INFORMATION:

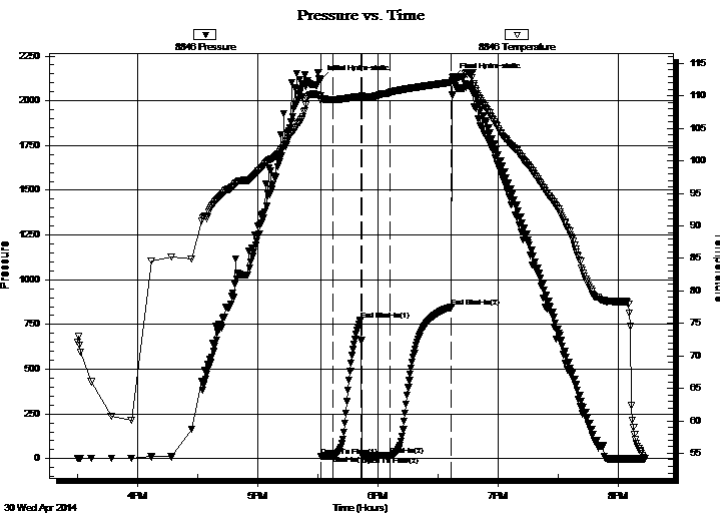
Formation: **L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:31:45
 Time Test Ended: 20:13:15
 Interval: **4263.00 ft (KB) To 4280.00 ft (KB) (TVD)**
 Total Depth: 4263.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2722.00 ft (KB)
 2715.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8846

Inside

Press@RunDepth: 16.41 psig @ 4275.00 ft (KB)
 Start Date: 2014.04.30 End Date: 2014.04.30
 Start Time: 15:30:15 End Time: 20:13:15
 Capacity: 8000.00 psig
 Last Calib.: 2014.04.30
 Time On Btm: 2014.04.30 @ 17:31:30
 Time Off Btm: 2014.04.30 @ 18:37:30

TEST COMMENT: IF:No blow
 IS:No return blow
 FF:Weak surface blow that died in 4 min.
 FS:No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2118.93	109.99	Initial Hydro-static
1	14.15	109.25	Open To Flow (1)
6	16.47	109.44	Shut-In(1)
20	775.57	109.92	End Shut-In(1)
21	16.11	109.81	Open To Flow (2)
35	16.41	110.50	Shut-In(2)
66	847.42	112.09	End Shut-In(2)
66	2128.89	112.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100%m	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56443

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 15:30:15

GENERAL INFORMATION:

Formation: **L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:31:45

Time Test Ended: 20:13:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: 4263.00 ft (KB) To 4280.00 ft (KB) (TVD)

Reference Elevations: 2722.00 ft (KB)

Total Depth: 4263.00 ft (KB) (TVD)

2715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8737 Outside

Press@RunDepth: psig @ 4275.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.30 End Date: 2014.04.30

Last Calib.: 2014.04.30

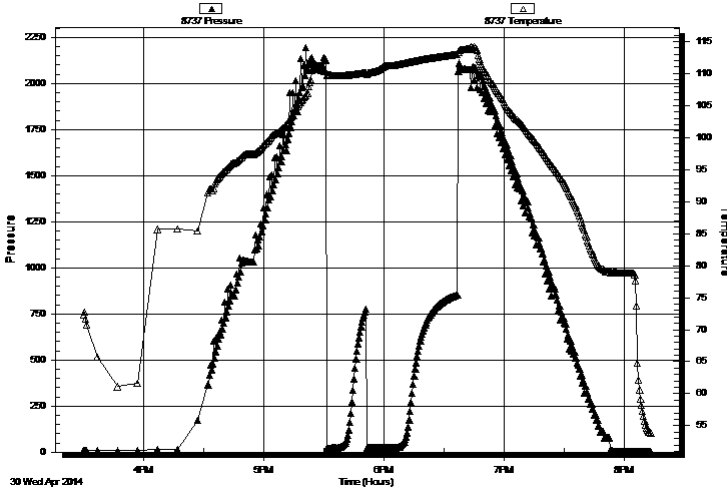
Start Time: 15:30:15 End Time: 20:13:15

Time On Btm:

Time Off Btm:

TEST COMMENT: IF:No blow
IS:No return blow
FF:Weak surface blow that died in 4 min.
FS:No return blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud 100%m	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56443

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 15:30:15

Tool Information

Drill Pipe:	Length: 4140.00 ft	Diameter: 3.80 inches	Volume: 58.07 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 58.67 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4263.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	17.00 ft				
Tool Length:	45.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4236.00	
Shut In Tool	5.00			4241.00	
Hydraulic tool	5.00			4246.00	
Jars	5.00			4251.00	
Safety Joint	3.00			4254.00	
Packer	5.00			4259.00	28.00 Bottom Of Top Packer
Packer	4.00			4263.00	
Stubb	1.00			4264.00	
Perforations	11.00			4275.00	
Recorder	0.00	8846	Inside	4275.00	
Recorder	0.00	8737	Outside	4275.00	
Bullnose	5.00			4280.00	17.00 Bottom Packers & Anchor

Total Tool Length: 45.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56443

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.30 @ 15:30:15

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.14 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	mud 100%m	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

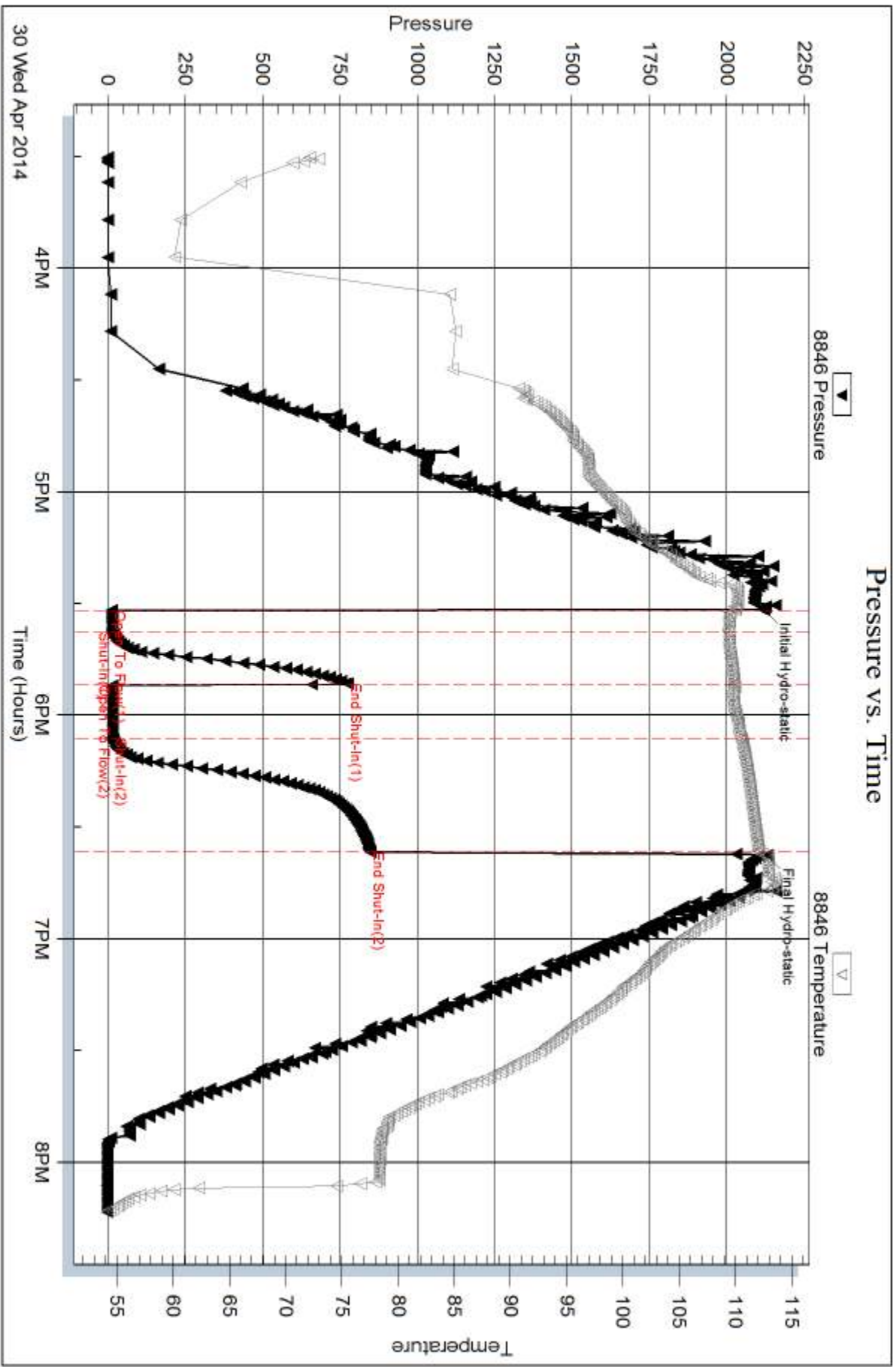
Num Gas Bombs: 0

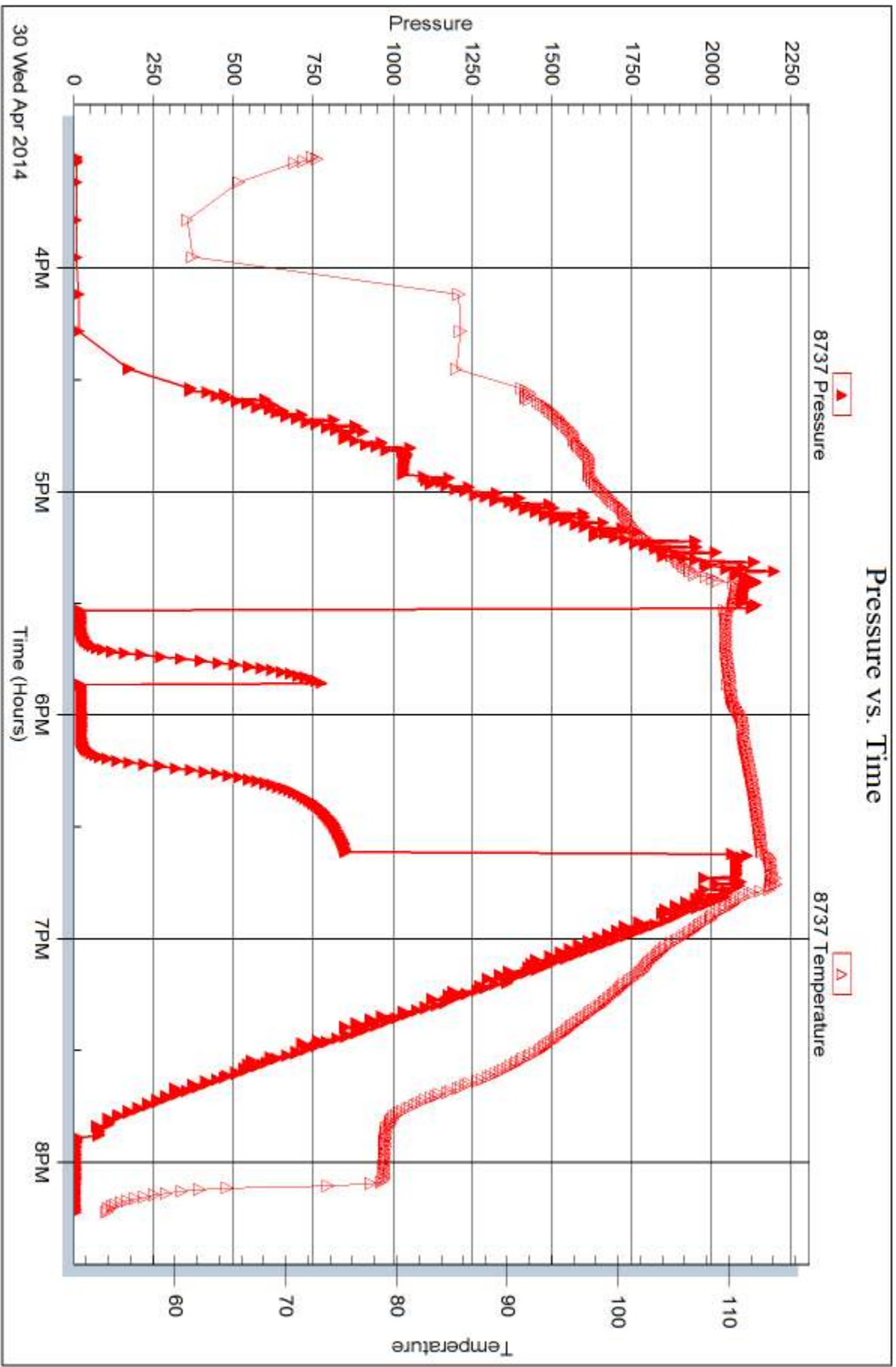
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.05.01 @ 03:05:15

End Date: 2014.05.01 @ 08:34:45

Job Ticket #: 56444 DST #: 5

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

Printed: 2014.05.05 @ 10:23:53



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

ATTN: Vern Schrag

Job Ticket: 56444

DST#: 5

Test Start: 2014.05.01 @ 03:05:15

GENERAL INFORMATION:

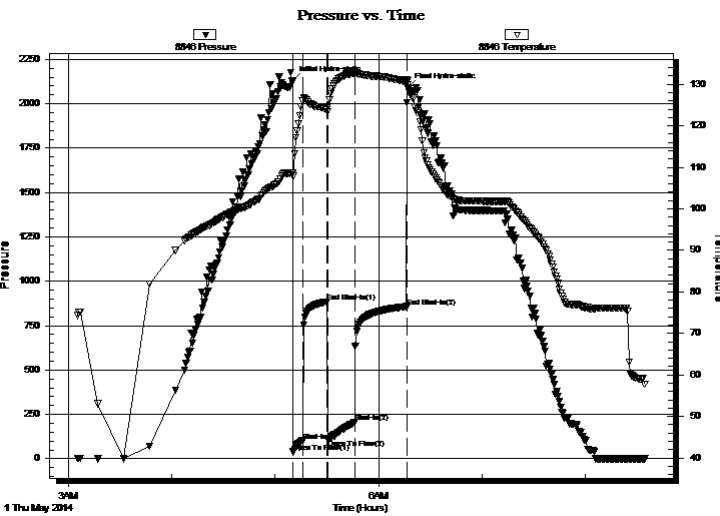
Formation: **L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:10:30
 Time Test Ended: 08:34:45
 Interval: **4271.00 ft (KB) To 4285.00 ft (KB) (TVD)**
 Total Depth: 4285.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2722.00 ft (KB)
 2715.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8846

Inside

Press@RunDepth: 206.10 psig @ 4280.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.05.01 End Date: 2014.05.01 Last Calib.: 2014.05.01
 Start Time: 03:05:15 End Time: 08:34:45 Time On Btm: 2014.05.01 @ 05:10:15
 Time Off Btm: 2014.05.01 @ 06:17:00

TEST COMMENT: IF:BOB in 5 min.
 IS:Return blow built to weak surface blow
 FF:BOB in 5 min.
 FS:Return blow built to 1/8" blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2128.03	108.59	Initial Hydro-static
1	38.27	107.86	Open To Flow (1)
6	100.75	125.95	Shut-In(1)
20	884.30	123.85	End Shut-In(1)
20	109.63	123.44	Open To Flow (2)
36	206.10	132.70	Shut-In(2)
66	857.04	130.53	End Shut-In(2)
67	2090.89	130.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
247.00	gcomw 2%g 3%o 20%m 75%w (123 FT)(2.34 s)	
124.00	gcw om 5%g 10%o 10%w 75%m	1.74
32.00	gcw om 5%g 15%w 30%o 50%m	0.45
30.00	Free oil 100% o	0.42
0.00	GIP= 62 ft	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56444

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.05.01 @ 03:05:15

Tool Information

Drill Pipe:	Length: 4140.00 ft	Diameter: 3.80 inches	Volume: 58.07 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4271.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	14.00 ft			
Tool Length:	42.00 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			4244.00	
Shut In Tool	5.00			4249.00	
Hydraulic tool	5.00			4254.00	
Jars	5.00			4259.00	
Safety Joint	3.00			4262.00	
Packer	5.00			4267.00	28.00 Bottom Of Top Packer
Packer	4.00			4271.00	
Stubb	1.00			4272.00	
Perforations	8.00			4280.00	
Recorder	0.00	8846	Inside	4280.00	
Recorder	0.00	8737	Outside	4280.00	
Bullnose	5.00			4285.00	14.00 Bottom Packers & Anchor

Total Tool Length: 42.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56444

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.05.01 @ 03:05:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

31000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.15 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
247.00	gcwm 2%g 3%o 20%m 75%w (123 FTColla	2.344
124.00	gcw om 5%g 10%o 10%w 75%m	1.739
32.00	gcw om 5%g 15%w 30%o 50%m	0.449
30.00	Free oil 100% o	0.421
0.00	GIP= 62 ft	0.000

Total Length: 433.00 ft Total Volume: 4.953 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

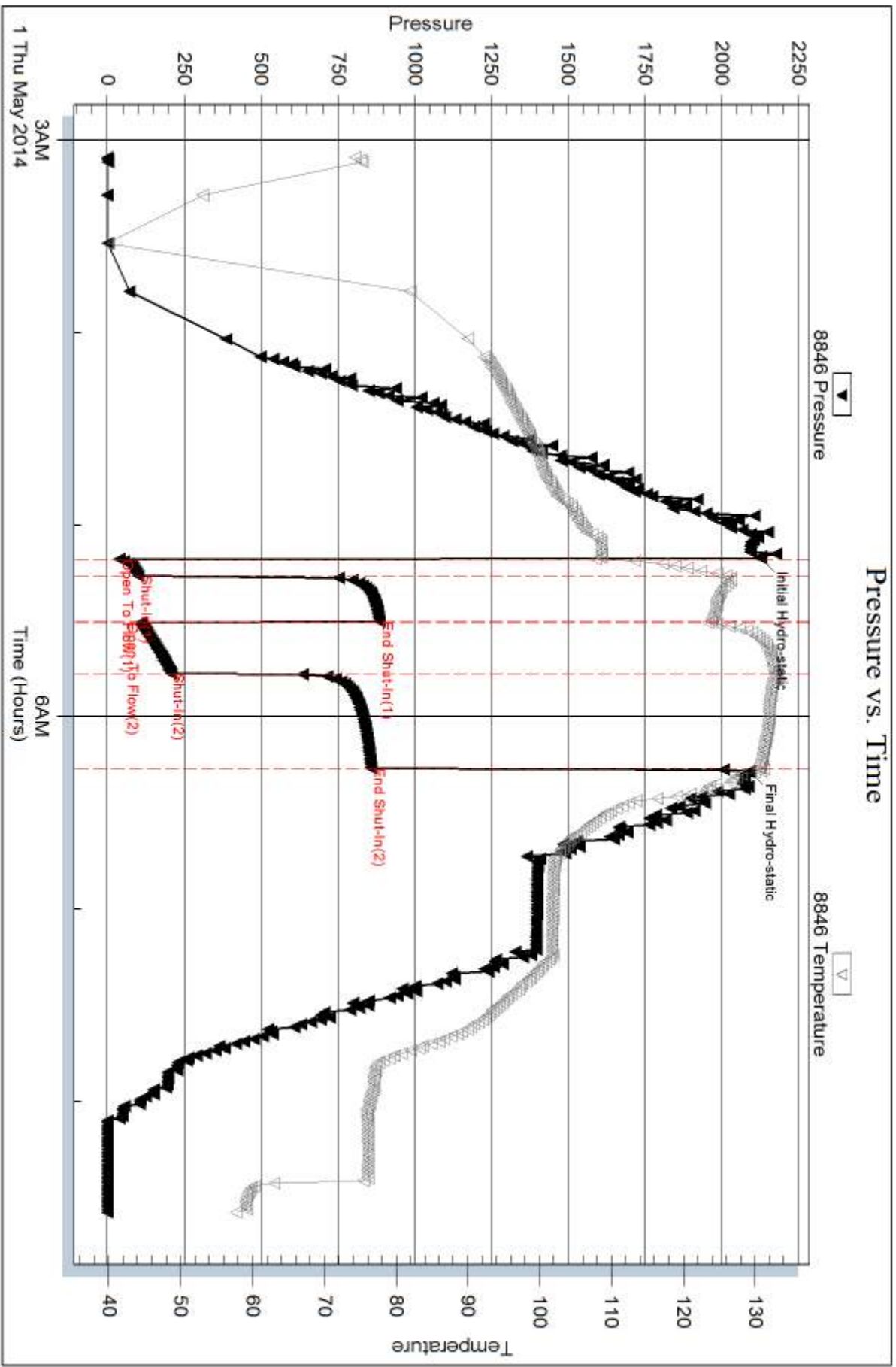
Serial #:

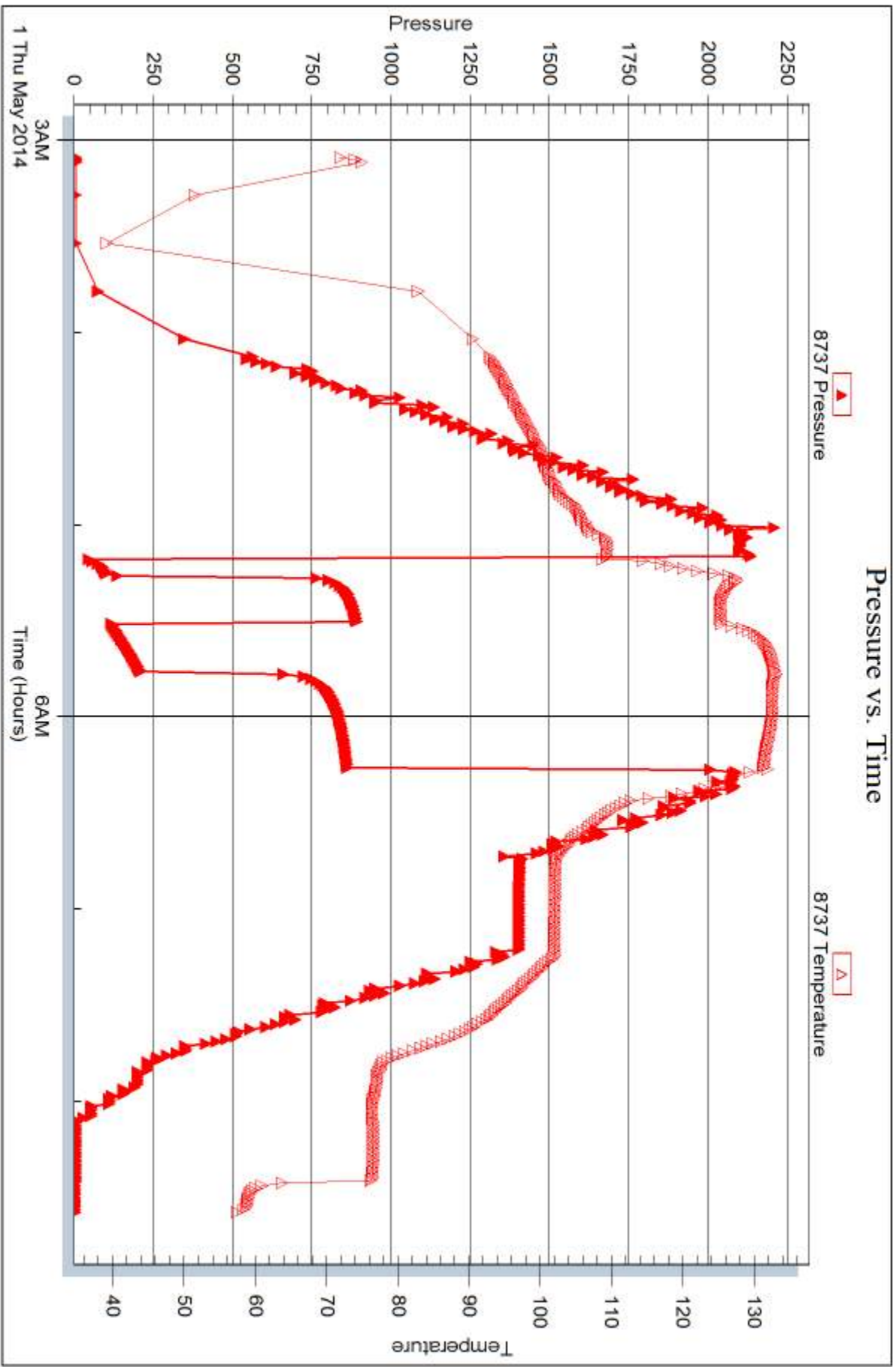
Laboratory Name:

Laboratory Location:

Recovery Comments: API 31 @ 70 corrected to 30@ 60

RW= .334@ 50.2* = 31,000 ppm







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.05.02 @ 02:03:00

End Date: 2014.05.02 @ 07:47:30

Job Ticket #: 56445 DST #: 6

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

Printed: 2014.05.05 @ 10:18:35



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56445

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.05.02 @ 02:03:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:56:00

Time Test Ended: 07:47:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: 4322.00 ft (KB) To 4413.00 ft (KB) (TVD)

Reference Elevations: 2722.00 ft (KB)

Total Depth: 4413.00 ft (KB) (TVD)

2715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8846

Inside

Press@RunDepth: 67.21 psig @ 4325.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.05.02

End Date:

2014.05.02

Last Calib.:

2014.05.05

Start Time: 02:03:15

End Time:

07:47:30

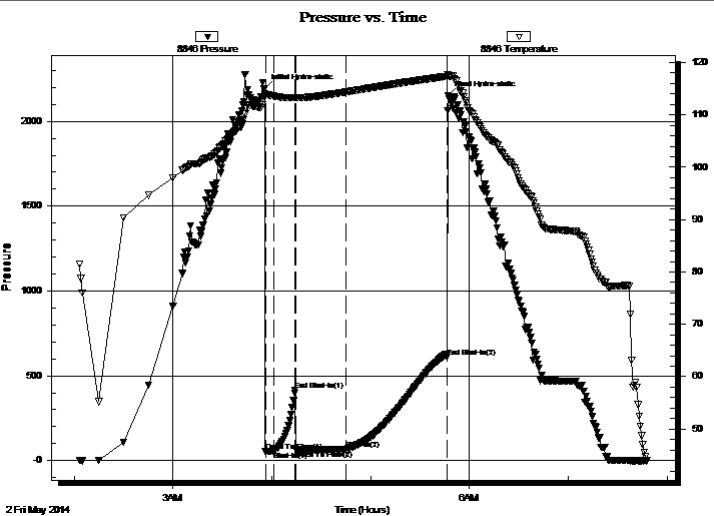
Time On Btm:

2014.05.02 @ 03:55:45

Time Off Btm:

2014.05.02 @ 05:47:00

TEST COMMENT: IF: Built to 1" blow
IS: No return blow
FF: Built to 3" blow
FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2193.13	113.99	Initial Hydro-static
1	52.33	113.61	Open To Flow (1)
6	56.14	113.60	Shut-In(1)
19	413.82	113.33	End Shut-In(1)
19	63.07	113.24	Open To Flow (2)
50	67.21	114.38	Shut-In(2)
111	608.28	117.36	End Shut-In(2)
112	2148.95	117.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	mco 20% m 80% o	0.15

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56445

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.05.02 @ 02:03:00

Tool Information

Drill Pipe:	Length: 4202.00 ft	Diameter: 3.80 inches	Volume: 58.94 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 59.54 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	4322.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	91.00 ft			
Tool Length:	119.00 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			4295.00	
Shut In Tool	5.00			4300.00	
Hydraulic tool	5.00			4305.00	
Jars	5.00			4310.00	
Safety Joint	3.00			4313.00	
Packer	5.00			4318.00	28.00 Bottom Of Top Packer
Packer	4.00			4322.00	
Stubb	1.00			4323.00	
Perforations	2.00			4325.00	
Recorder	0.00	8846	Inside	4325.00	
Recorder	0.00	8737	Outside	4325.00	
Change Over Sub	1.00			4326.00	
Blank Spacing	63.00			4389.00	
Change Over Sub	1.00			4390.00	
Perforations	18.00			4408.00	
Bullnose	5.00			4413.00	91.00 Bottom Packers & Anchor
Total Tool Length:	119.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56445

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.05.02 @ 02:03:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 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
30.00	mco 20%m 80%o	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

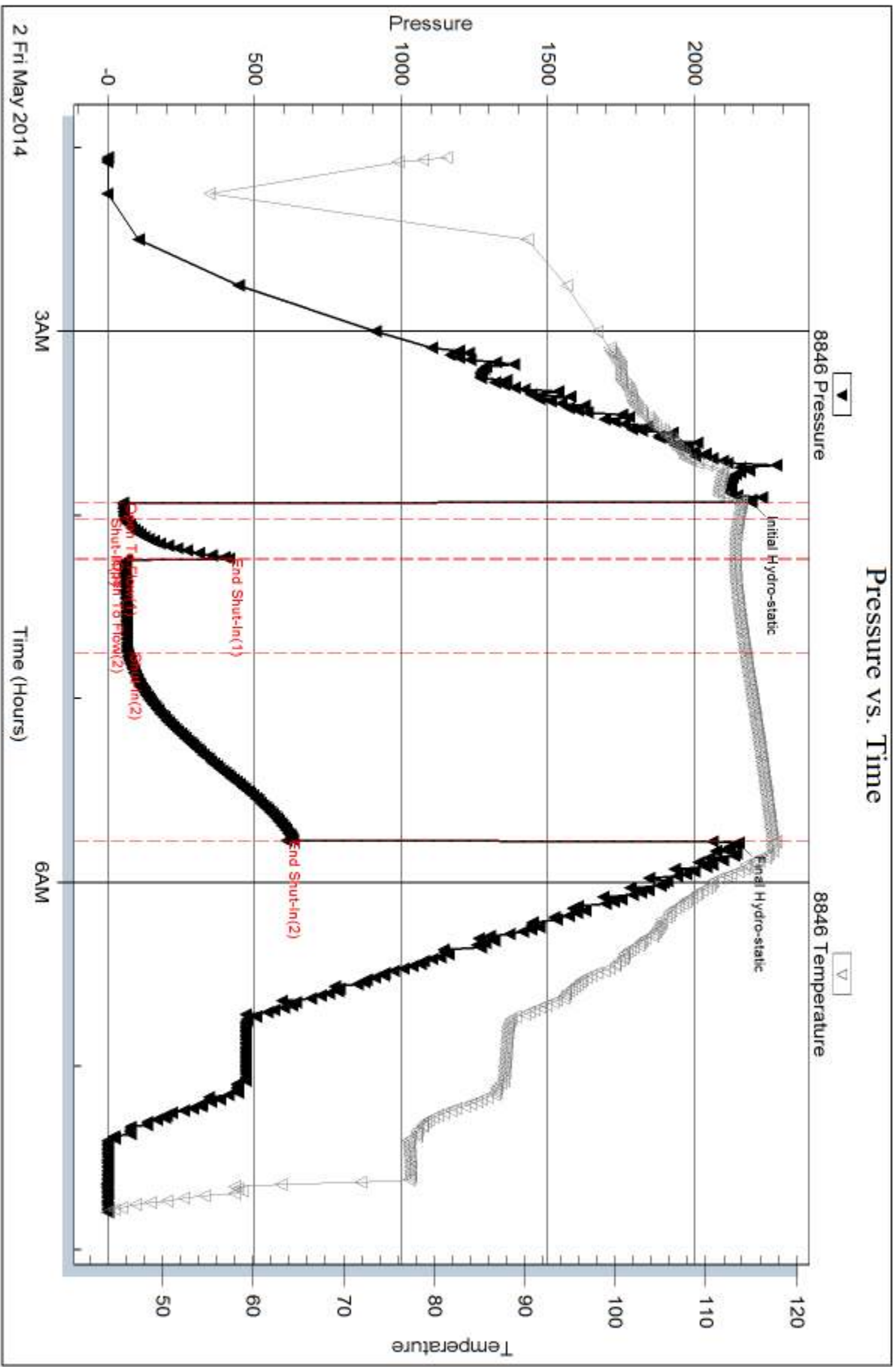
Num Gas Bombs: 0

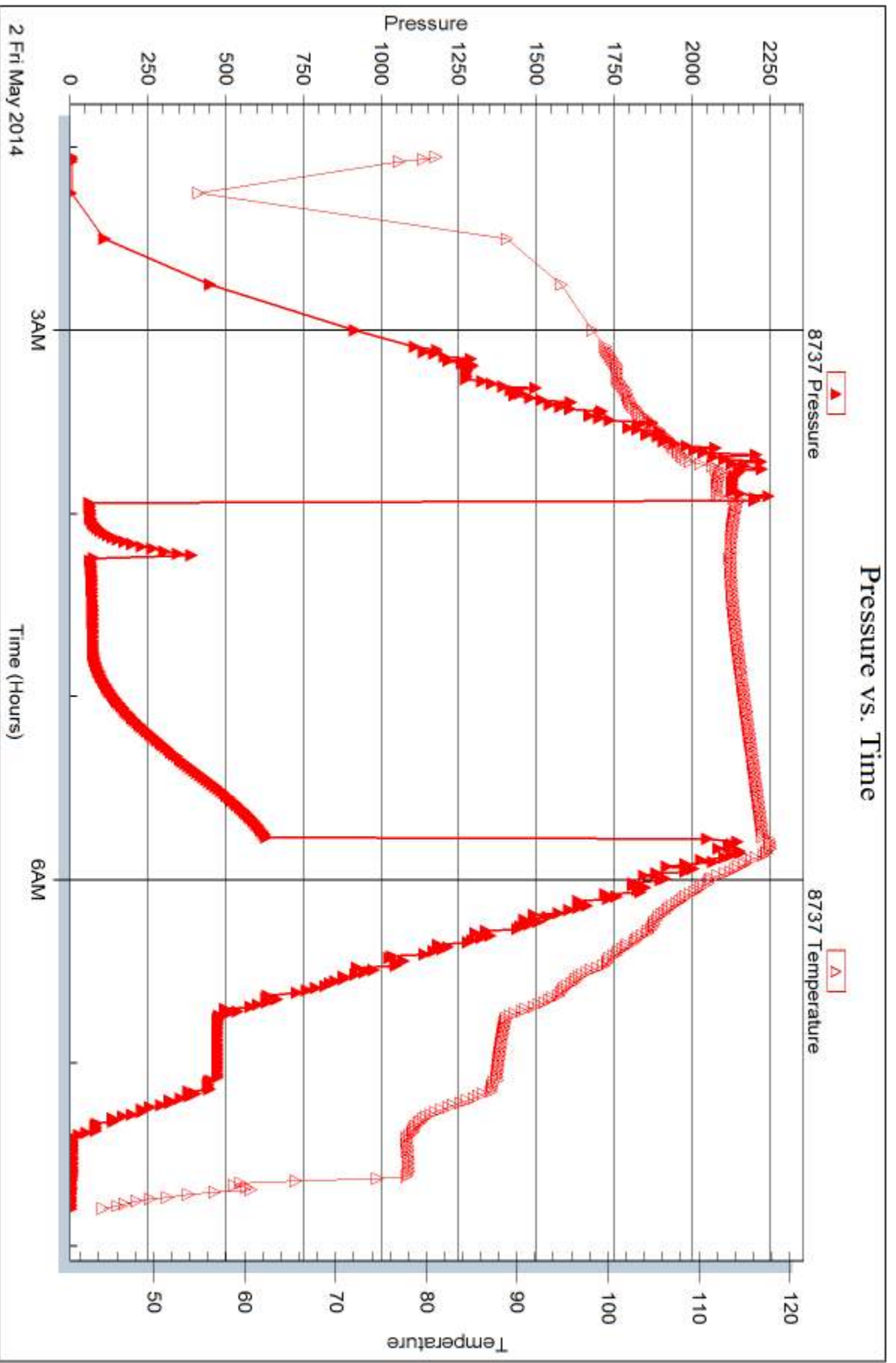
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.05.02 @ 19:54:15

End Date: 2014.05.03 @ 00:02:15

Job Ticket #: 56446 DST #: 7

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

Printed: 2014.05.05 @ 10:18:06



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56446

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.05.02 @ 19:54:15

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 00:02:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: 4419.00 ft (KB) To 4500.00 ft (KB) (TVD)

Reference Elevations: 2722.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

2715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8846

Inside

Press@RunDepth: psig @ 4422.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.05.02

End Date:

2014.05.03

Last Calib.:

2014.05.03

Start Time: 19:54:15

End Time:

00:02:15

Time On Btm:

2014.05.02 @ 21:44:45

Time Off Btm:

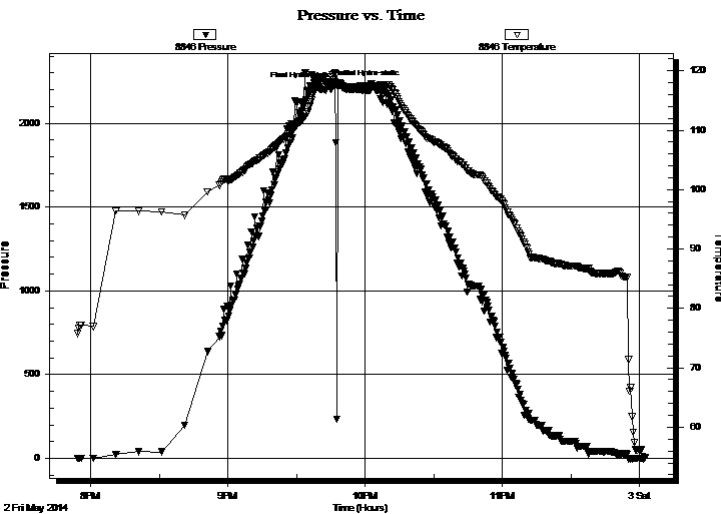
2014.05.02 @ 21:48:15

TEST COMMENT: IF:PACKER FAILURE

IS:

FF:

FS:



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2230.49	117.87	Initial Hydro-static
4	2218.43	117.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
450.00	mud 100%m	5.19

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56446

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.05.02 @ 19:54:15

GENERAL INFORMATION:

Formation:	Pawnee				
Deviated:	No	Whipstock:	ft (KB)	Test Type:	Conventional Bottom Hole (Reset)
Time Tool Opened:				Tester:	Mike Roberts
Time Test Ended:	00:02:15			Unit No:	65
Interval:	4419.00 ft (KB) To 4500.00 ft (KB) (TVD)			Reference Elevations:	2722.00 ft (KB)
Total Depth:	4500.00 ft (KB) (TVD)				2715.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition:	Fair	KB to GR/CF:	7.00 ft

Serial #: 8737

Outside

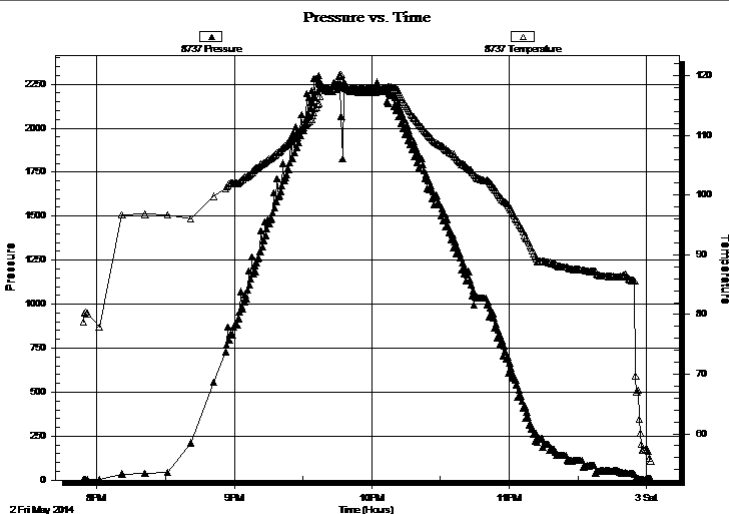
Press@RunDepth:	psig @	4422.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2014.05.02	End Date:	2014.05.03	Last Calib.:	2014.05.03
Start Time:	19:54:15	End Time:	00:02:00	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: IF:PACKER FAILURE

IS:

FF:

FS:



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
450.00	mud 100%m	5.19

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56446

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.05.02 @ 19:54:15

Tool Information

Drill Pipe:	Length: 4300.00 ft	Diameter: 3.80 inches	Volume: 60.32 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.92 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4419.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	81.00 ft			
Tool Length:	109.00 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			4392.00	
Shut In Tool	5.00			4397.00	
Hydraulic tool	5.00			4402.00	
Jars	5.00			4407.00	
Safety Joint	3.00			4410.00	
Packer	5.00			4415.00	28.00 Bottom Of Top Packer
Packer	4.00			4419.00	
Stubb	1.00			4420.00	
Perforations	2.00			4422.00	
Recorder	0.00	8846	Inside	4422.00	
Recorder	0.00	8737	Outside	4422.00	
Change Over Sub	1.00			4423.00	
Blank Spacing	63.00			4486.00	
Change Over Sub	1.00			4487.00	
Perforations	8.00			4495.00	
Bullnose	5.00			4500.00	81.00 Bottom Packers & Anchor
Total Tool Length:	109.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56446

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.05.02 @ 19:54:15

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.11 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
450.00	mud 100%m	5.192

Total Length: 450.00 ft Total Volume: 5.192 bbl

Num Fluid Samples: 0

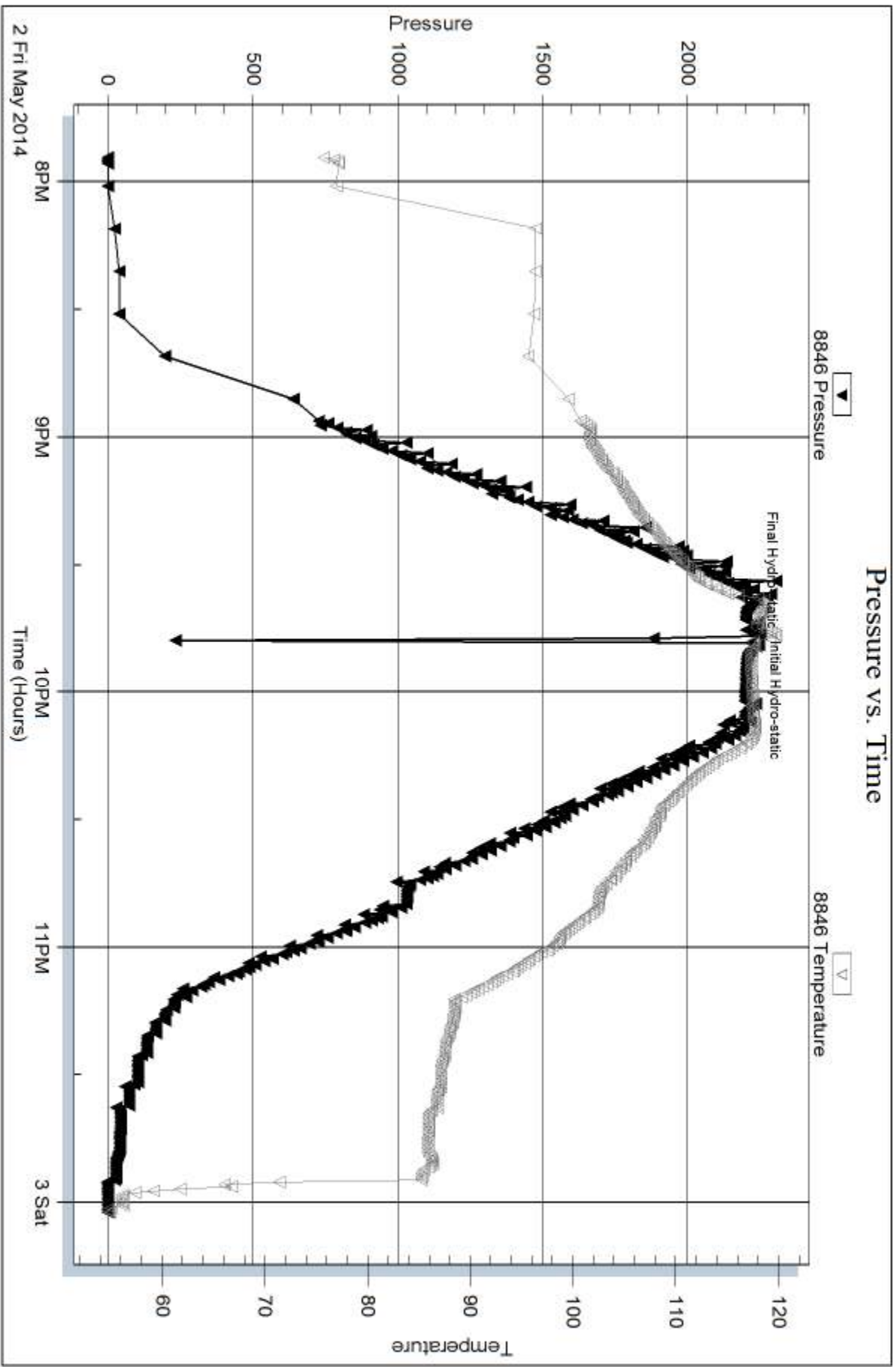
Num Gas Bombs: 0

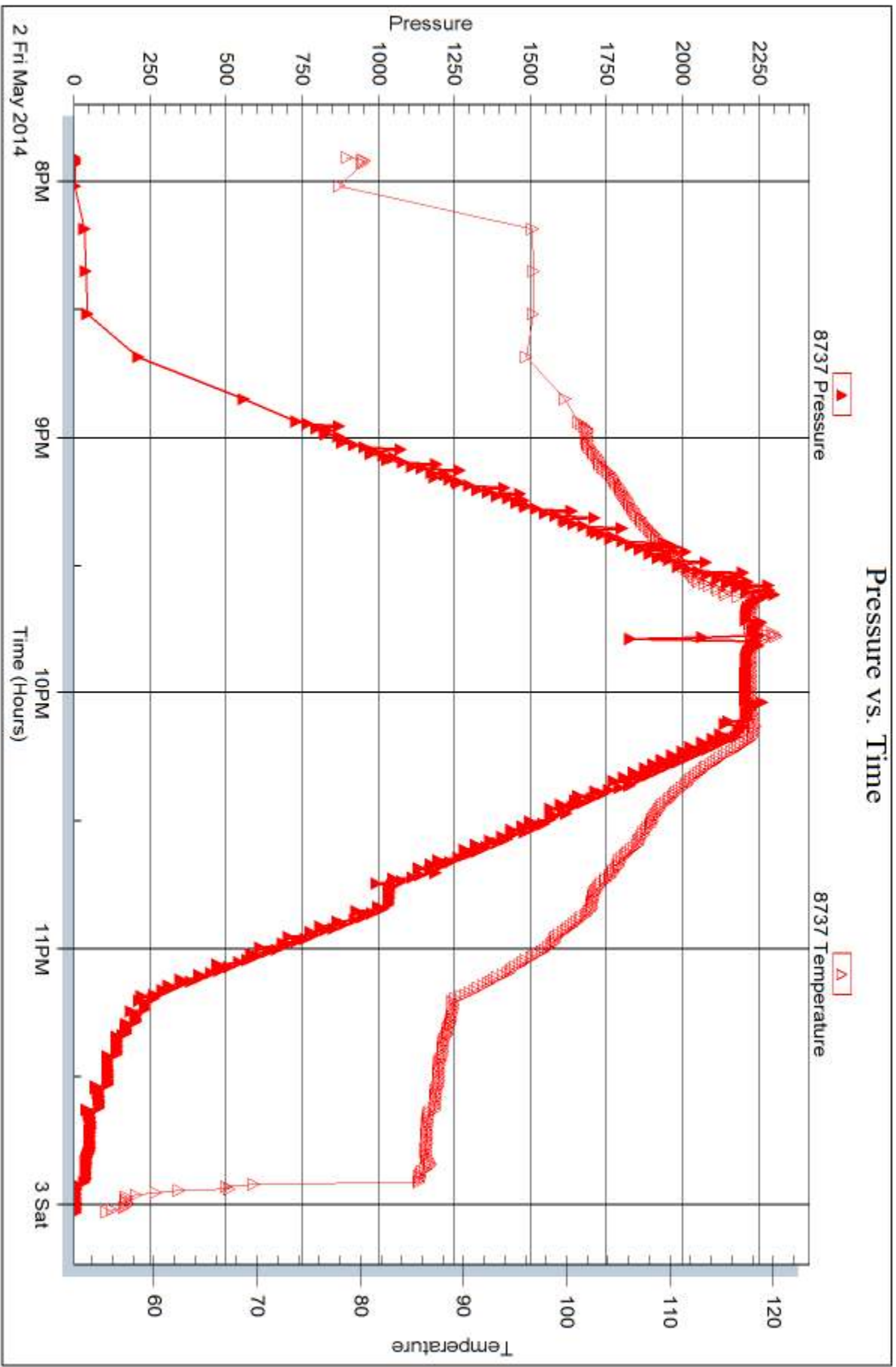
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Hineman Unit 1 28

28-18s-28w

Start Date: 2014.05.03 @ 10:02:15

End Date: 2014.05.03 @ 14:25:00

Job Ticket #: 56447 DST #: 8

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

Printed: 2014.05.05 @ 09:55:47



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56447

DST#: 8

ATTN: Vern Schrag

Test Start: 2014.05.03 @ 10:02:15

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:45:45

Time Test Ended: 14:25:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: 4469.00 ft (KB) To 4555.00 ft (KB) (TVD)

Reference Elevations: 2722.00 ft (KB)

Total Depth: 4555.00 ft (KB) (TVD)

2715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8846 Inside

Press@RunDepth: 55.24 psig @ 4475.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.05.03

End Date:

2014.05.03

Last Calib.: 2014.05.03

Start Time: 10:02:15

End Time:

14:25:00

Time On Btm: 2014.05.03 @ 11:45:30

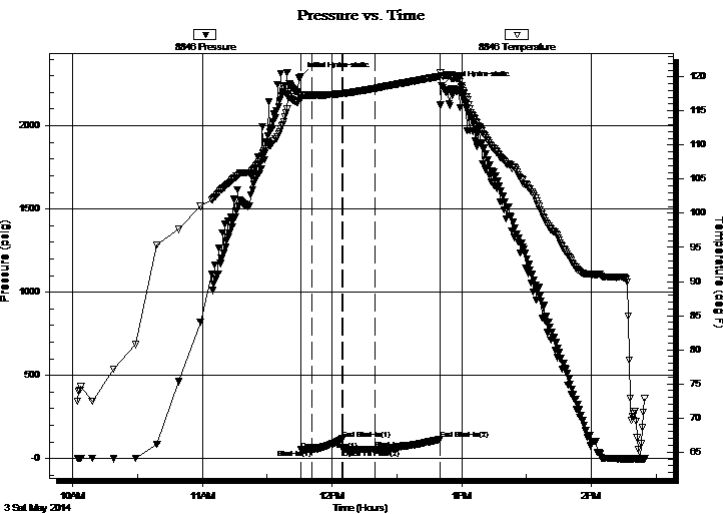
Time Off Btm: 2014.05.03 @ 12:50:45

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
0	2293.60	117.37	Initial Hydro-static
1	53.26	116.86	Open To Flow (1)
5	53.59	117.31	Shut-In(1)
20	119.23	117.57	End Shut-In(1)
20	54.55	117.57	Open To Flow (2)
35	55.24	118.32	Shut-In(2)
65	115.94	120.08	End Shut-In(2)
66	2239.60	120.15	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.02

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56447

DST#: 8

ATTN: Vern Schrag

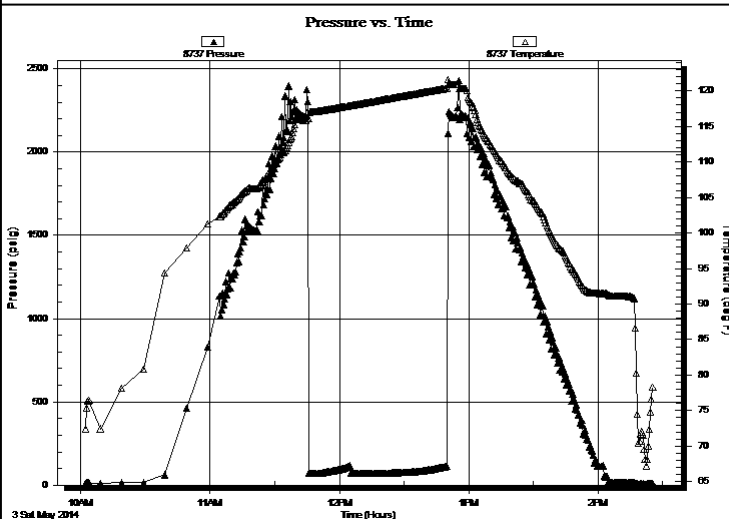
Test Start: 2014.05.03 @ 10:02:15

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 11:45:45 Tester: Mike Roberts
 Time Test Ended: 14:25:00 Unit No: 65
 Interval: **4469.00 ft (KB) To 4555.00 ft (KB) (TVD)** Reference Elevations: 2722.00 ft (KB)
 Total Depth: 4555.00 ft (KB) (TVD) 2715.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

Serial #: 8737 Outside
 Press@RunDepth: psig @ 4475.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.05.03 End Date: 2014.05.03 Last Calib.: 2014.05.03
 Start Time: 10:02:15 End Time: 14:25:15 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 100% m	0.02

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56447

DST#: 8

ATTN: Vern Schrag

Test Start: 2014.05.03 @ 10:02:15

Tool Information

Drill Pipe:	Length: 4331.00 ft	Diameter: 3.80 inches	Volume: 60.75 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: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 61.35 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4469.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	86.00 ft				
Tool Length:	110.00 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			4446.00	
Shut In Tool	5.00			4451.00	
Hydraulic tool	5.00			4456.00	
Jars	5.00			4461.00	
Safety Joint	3.00			4464.00	
Packer	5.00			4469.00	24.00 Bottom Of Top Packer
Packer - Shale	0.00			4469.00	
Stubb	1.00			4470.00	
Perforations	5.00			4475.00	
Recorder	0.00	8846	Inside	4475.00	
Recorder	0.00	8737	Outside	4475.00	
Change Over Sub	1.00			4476.00	
Blank Spacing	63.00			4539.00	
Change Over Sub	1.00			4540.00	
Perforations	10.00			4550.00	
Bullnose	5.00			4555.00	86.00 Anchor Tool
Total Tool Length:	110.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

28-18s-28w

562 W. State Rd.
Olmitz KS 67564

Hineman Unit 1 28

Job Ticket: 56447

DST#: 8

ATTN: Vern Schrag

Test Start: 2014.05.03 @ 10:02:15

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:

bbl

Water Loss: 6.38 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
5.00	mud 100% m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

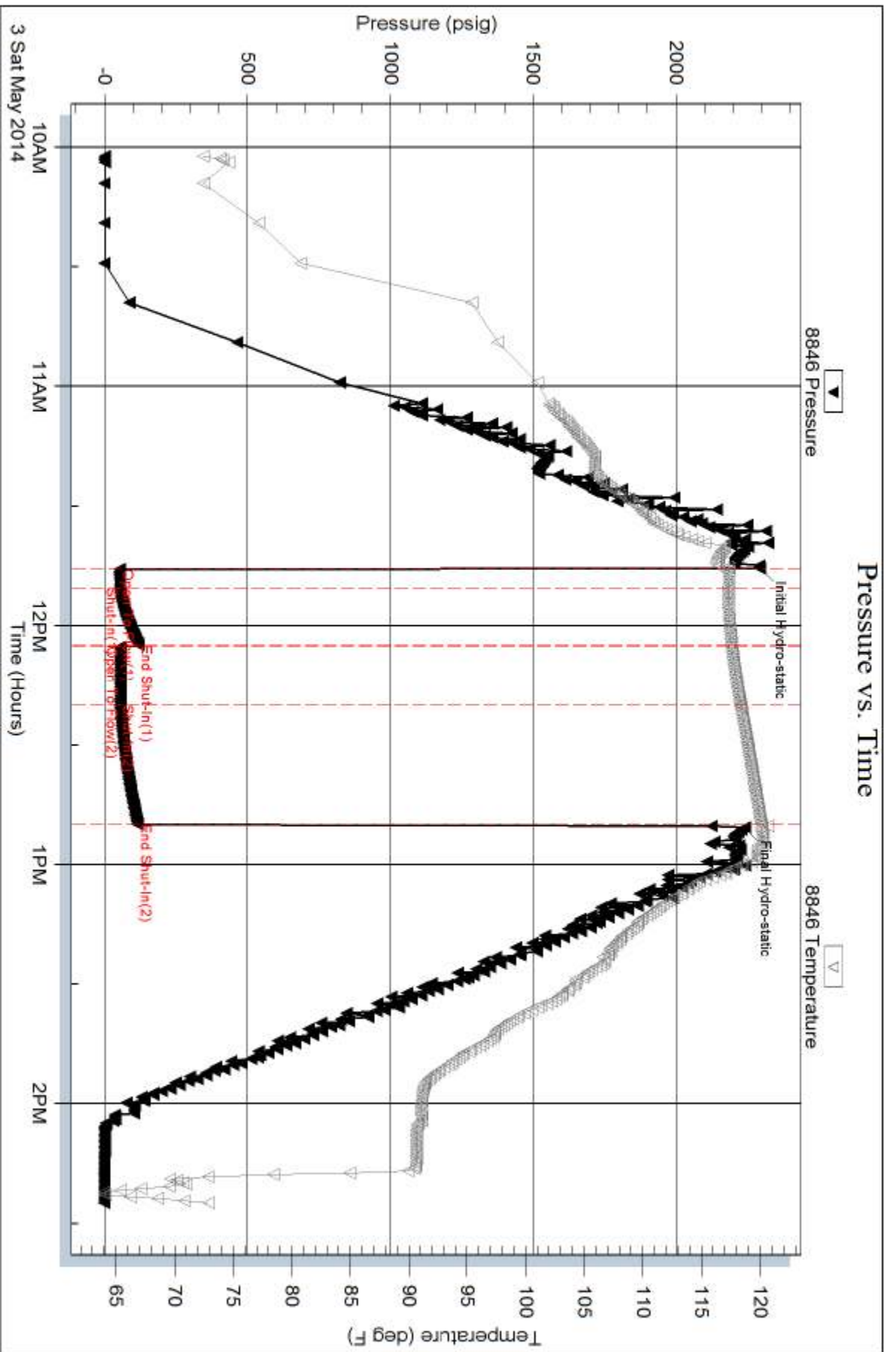
Num Gas Bombs: 0

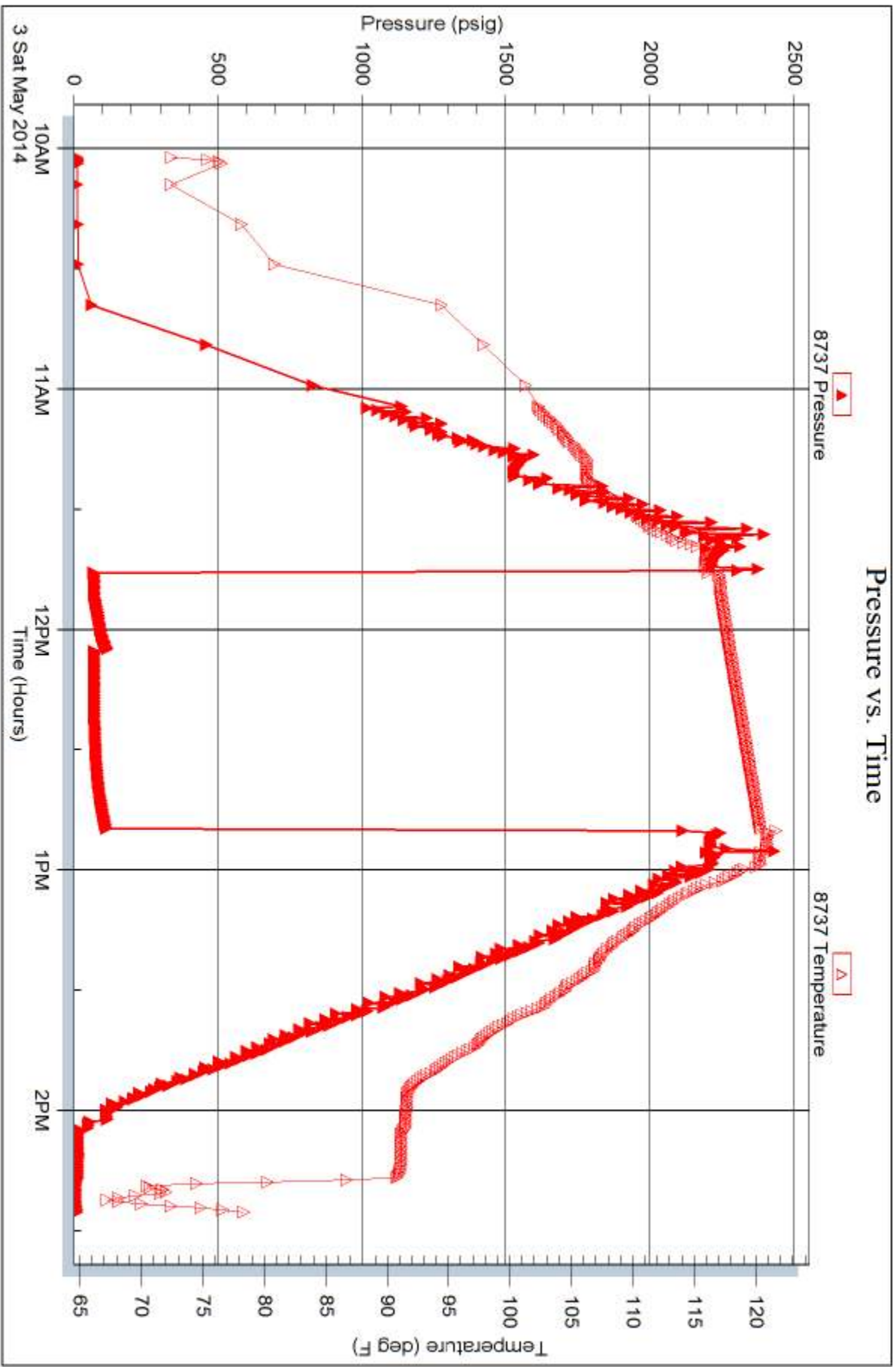
Serial #:

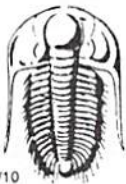
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56440

4/10

Well Name & No. Hiveman Unit 1-28 Test No. 1 Date 4-28-14
 Company Larson Engineering, Inc. Elevation 2722 KB 2715 GL
 Address 562 W. State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern ~~Schrag~~ Schrag Rig HD#3
 Location: Sec. 28 Twp. 18S Rge. 28W Co. LANE State KS

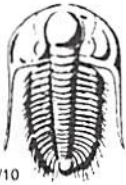
Interval Tested 4127-4150 Zone Tested H
 Anchor Length 23 Drill Pipe Run 3984 Mud Wt. 9.0
 Top Packer Depth 4122 Drill Collars Run 123 Vis 60
 Bottom Packer Depth 4127 Wt. Pipe Run Ø WL 7.2
 Total Depth 4150 Chlorides 2300 ppm System LCM 1
 Blow Description IF: Hit Bridge 5 STDS off Bottom
IS:
FF:
FS:

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	Feet of	%gas	%oil	%water	%mud

Rec Total 2266 BHT 1855 Gravity 1050 API RW 250 @ 75 °F Chlorides 2300 ppm
 (A) Initial Hydrostatic 2266 Test 1050 T-On Location 17:30
 (B) First Initial Flow 2266 Jars 250 T-Started 18:18
 (C) First Final Flow 2266 Safety Joint 75 T-Open Bridge
 (D) Initial Shut-In 2266 Circ Sub NC T-Pulled 24:26
 (E) Second Initial Flow 2266 Hourly Standby T-Out 24:26
 (F) Second Final Flow 2266 Mileage 56 RT 86.80 Comments
 (G) Final Shut-In 2266 Sampler
 (H) Final Hydrostatic 1855 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies
 Extra Recorder Sub Total 0
 Day Standby Total 1461.80
 Accessibility MP/DST Disc't
 Sub Total 1461.80

Approved By Vern Schrag Our Representative Mike Rohlf

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. 56441

4/10

Well Name & No. Hiveman Unit #1-28 Test No. 2 Date 4-29-14
 Company Larson Engineering Inc. Elevation 2722 KB 2715 GL
 Address 562 W. State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 28 Twp. 18S Rge. 28W Co. LANE State KS

Interval Tested 4127-4150 Zone Tested H
 Anchor Length 23 Drill Pipe Run 3984 Mud Wt. 9.0
 Top Packer Depth 4122 Drill Collars Run 123 Vis 60
 Bottom Packer Depth 4127 Wt. Pipe Run φ WL 7.2
 Total Depth 4150 Chlorides 2300 ppm System LCM 1

Blow Description IF: Built to Weak Surface Blow
IS: No Return Blow
FF: Weak Surface Blow & Died in 8 Min.
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</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

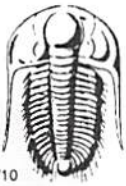
Rec Total 5 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2037 Test 1250 T-On Location 03:38
 (B) First Initial Flow 14 Jars 250 T-Started 03:40
 (C) First Final Flow 17 Safety Joint 75 T-Open 05:35
 (D) Initial Shut-In 144 Circ Sub NO T-Pulled 06:40
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 09:09
 (F) Second Final Flow 20 Mileage 56RT 86.80 Comments _____
 (G) Final Shut-In 87 Sampler _____
 (H) Final Hydrostatic 2005 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

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

Approved By Vern Schrag Our Representative Mike Rohlf

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. 56442

Well Name & No. Hinemman Unit #1-28 Test No. 3 Date 4-30-14
 Company Larson Engineering Inc. Elevation 2722 KB 2715 GL
 Address 562 W. State Rd 40 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 28 Twp. 18S Rge. 28W Co. LANE State KS

Interval Tested 4229-4243 Zone Tested K
 Anchor Length ~~4224~~ 14 Drill Pipe Run 4108 Mud Wt. 9.0
 Top Packer Depth ~~4229~~ 4224 Drill Collars Run 123 Vis 86
 Bottom Packer Depth ~~4243~~ 4229 Wt. Pipe Run 0 WL 6.0
 Total Depth 4243 Chlorides 2300 ppm System LCM 2
 Blow Description IF: Built to 1/8" Blow
FS: No Return Blow
FF: Built to leak surface Blow
FS: No Return Blow

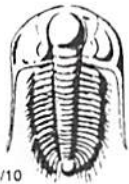
Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>MUD with Slight show of oil</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

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

(A) Initial Hydrostatic <u>2099</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>12:25</u>
(B) First Initial Flow <u>21</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:41</u>
(C) First Final Flow <u>27</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>02:33</u>
(D) Initial Shut-In <u>608</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>03:38</u>
(E) Second Initial Flow <u>29</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>05:07</u>
(F) Second Final Flow <u>41</u>	<input checked="" type="checkbox"/> Mileage <u>56 RT</u> 86.80	Comments _____
(G) Final Shut-In <u>609</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2091</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer _____	<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>1661.80</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1661.80</u>	

Approved By Vern Schrag Our Representative MT 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 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. 56443

Well Name & No. Hinemann Unit #1-28 Test No. 4 Date 4-30-14
 Company Larson Engineering Inc Elevation 2722 KB 2715 GL
 Address 562 W. State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 28 Twp. 98S Rge. 28W Co. LANE State KS

Interval Tested 4263-4280 Zone Tested L
 Anchor Length 17' Drill Pipe Run 4140 Mud Wt. 9.1
 Top Packer Depth 4258 Drill Collars Run 123 Vis 58
 Bottom Packer Depth 4263 Wt. Pipe Run Ø WL 7.2
 Total Depth 4280 Chlorides 2600 ppm System LCM 1

Blow Description IF: No Blow
FS: No Return Blow
FF: weak surface Blow that died in 4 Min.
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</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 1 BHT 112 Gravity - API RW - @ - °F Chlorides ✓ ppm

(A) Initial Hydrostatic <u>2118</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>15:00</u>
(B) First Initial Flow <u>14</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>15:30</u>
(C) First Final Flow <u>16</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>17:31</u>
(D) Initial Shut-In <u>775</u>	<input checked="" type="checkbox"/> Circ Sub <u>NU</u>	T-Pulled <u>18:35</u>
(E) Second Initial Flow <u>16</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>20:13</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>56 RT</u> <u>86.80</u>	Comments
(G) Final Shut-In <u>847</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2128</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1661.80</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1661.80</u>	

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 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. 56444

Well Name & No. Hiveman Unit #1-28 Test No. 5 Date 5-1-14
 Company Larson Engineering Inc Elevation 2722 KB 2715 GL
 Address 562 W St. Rd 40 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 28 Twp. 18S Rge. 28W Co. LANE State KS

Interval Tested 4271-4285 Zone Tested L
 Anchor Length ~~4266~~ 14 Drill Pipe Run 4140 Mud Wt. 9.1
 Top Packer Depth 4266 Drill Collars Run 123 Vis 58
 Bottom Packer Depth 4271 Wt. Pipe Run Ø WL 7.2
 Total Depth 4285 Chlorides 2600 ppm System LCM 1

Blow Description IF: BOB in 5 Min.
IS: Return Blow Built to weak surface Blow
FF: BOB in 5 Min.
FS: Return Blow Built to 1/8" Blow

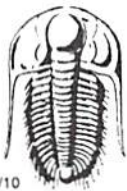
Rec	Feet of	%gas	%oil	%water	%mud
<u>0</u>	<u>62' GIP</u>				
<u>30</u>	<u>Free oil</u>		<u>100</u>		
<u>32</u>	<u>gc com</u>	<u>5</u>	<u>30</u>	<u>15</u>	<u>50</u>
<u>124</u>	<u>gc com</u>	<u>5</u>	<u>10</u>	<u>10</u>	<u>75</u>
<u>247</u>	<u>gc com w (123 collars)</u>	<u>2</u>	<u>3</u>	<u>75</u>	<u>20</u>
<u>433</u>	<u>BHT 130</u>	<u>Gravity 30</u>	<u>API RW 334 @ 50.2° F</u>	<u>Chlorides 31000</u>	<u>ppm</u>

(A) Initial Hydrostatic 2128 Test 1250 T-On Location 02:35
 (B) First Initial Flow 38 Jars 250 T-Started 03:05
 (C) First Final Flow 100 Safety Joint 75 T-Open 05:10
 (D) Initial Shut-In 884 Circ Sub NC T-Pulled 06:15
 (E) Second Initial Flow 109 Hourly Standby _____ T-Out 08:34
 (F) Second Final Flow 206 Mileage 56 RT 86.80 Comments _____
 (G) Final Shut-In 857 Sampler _____
 (H) Final Hydrostatic 2090 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1661.80
 Accessibility _____ MP/DST Disc't _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Sub Total 1661.80

Approved By James C. Selberg Our Representative Mark Rohrbach

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. **56445**

4/10

Well Name & No. Hixeman Unit #1-28 Test No. 6 Date 5-2-14
 Company Larson Engineering Inc Elevation 2722 KB 2715 GL
 Address 562 W. St. Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 28 Twp. 18S Rge. 28W Co. Lane State KS

Interval Tested 4322-4413 Zone Tested Marmaton
 Anchor Length 91 Drill Pipe Run 4202 Mud Wt. 9.1
 Top Packer Depth 4317 Drill Collars Run 123 Vis FE 56
 Bottom Packer Depth 4322 Wt. Pipe Run 0 WL 7.2
 Total Depth 4413 Chlorides 2800 ppm System LCM 1
 Blow Description IF: Built to 1" Blow
IS: NO Return Blow
FF: Built to 3" Blow
FS: NO Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>MC0</u>	<u>80</u>		<u>20</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

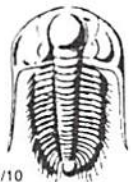
Rec Total 30 BHT 118 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2193 Test 1250 T-On Location 01:45
 (B) First Initial Flow 52 Jars 250 T-Started 02:03
 (C) First Final Flow 56 Safety Joint 75 T-Open 03:56
 (D) Initial Shut-In 413 Circ Sub NC T-Pulled 05:46
 (E) Second Initial Flow 56 Hourly Standby — T-Out 07:47
 (F) Second Final Flow 67 Mileage 56 86.80 Comments —
 (G) Final Shut-In 629 Sampler —
 (H) Final Hydrostatic 2148 Straddle — Ruined Shale Packer —

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

Approved By Vern Schrag Our Representative Mike Rohrb

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. **56446**

Well Name & No. Hineman Unit #1-28 Test No. 7 Date 5-2-14
 Company Larson Engineering Inc. Elevation 2722 KB 2715 GL
 Address 562 W. St. Rd 4 Omitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 28 Twp. 18s Rge. 28W Co. LANE State KS

Interval Tested 4419-4500 Zone Tested Pawnee
 Anchor Length 81 Drill Pipe Run 4300 Mud Wt. 9.1
 Top Packer Depth 4414 Drill Collars Run 123 Vis 63
 Bottom Packer Depth 4419 Wt. Pipe Run Ø WL 6.4
 Total Depth 4500 Chlorides 2800 ppm System LCM ~~2500~~ 1

Blow Description IF:
IS:
FF: Packer failure
FS:

Rec	Feet of	%gas	%oil	%water	%mud
<u>450</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

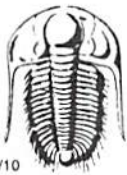
Rec Total 450 BHT 119 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2230 Test 1050 T-On Location 19:20
 (B) First Initial Flow / Jars 250 T-Started 19:54
 (C) First Final Flow / Safety Joint 75 T-Open 21:45
 (D) Initial Shut-In / Circ Sub NC T-Pulled _____
 (E) Second Initial Flow / Hourly Standby _____ T-Out 00:02
 (F) Second Final Flow / Mileage 56 RT 86.80 Comments _____
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic 2218 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open _____ Extra Packer _____ Extra Copies _____
 Initial Shut-In _____ Extra Recorder _____ Sub Total 0
 Final Flow _____ Day Standby _____ Total 1461.80
 Final Shut-In _____ Accessibility _____ MP/DST Disc't _____
 Sub Total 1461.80

Approved By _____ Our Representative M. Bobak

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. 56447

Well Name & No. Hiveman Unit #1-28 Test No. 8 Date 5-3-14
 Company Larson Engineering Inc Elevation 2722 KB 2715 GL
 Address 562 W. St. Rd. 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 28 Twp. 18S Rge. 28W Co. LANE State KS

Interval Tested 4469-4555 Zone Tested Cherokee
 Anchor Length 86 Drill Pipe Run 4331 Mud Wt. 9.1
 Top Packer Depth 4464 Drill Collars Run 123 Vis 63
 Bottom Packer Depth 4469 Wt. Pipe Run Ø WL 6.4
 Total Depth 4555 Chlorides 2800 ppm System LCM 1
 Blow Description IF: Built to Weak 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</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 5 BHT 120 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2293</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>09:10</u>
(B) First Initial Flow <u>53</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>10:02</u>
(C) First Final Flow <u>53</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>11:46</u>
(D) Initial Shut-In <u>119</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>12:51</u>
(E) Second Initial Flow <u>54</u>	<input type="checkbox"/> Hourly Standby	T-Out
(F) Second Final Flow <u>55</u>	<input checked="" type="checkbox"/> Mileage <u>56 RT</u> 86.80	Comments
(G) Final Shut-In <u>115</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2239</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<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>1911.80</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1911.80</u>	

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 lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.