



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.16 @ 21:49:00

End Date: 2013.09.17 @ 02:31:09

Job Ticket #: 52938 DST #: 1

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

Printed: 2013.09.24 @ 10:09:45



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

GENERAL INFORMATION:

Formation: **LKC 'B'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:00

Time Test Ended: 02:31:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 3961.00 ft (KB) To 3983.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 3983.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 40.90 psig @ 3962.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.16

End Date:

2013.09.17

Last Calib.: 2013.09.17

Start Time: 21:49:02

End Time:

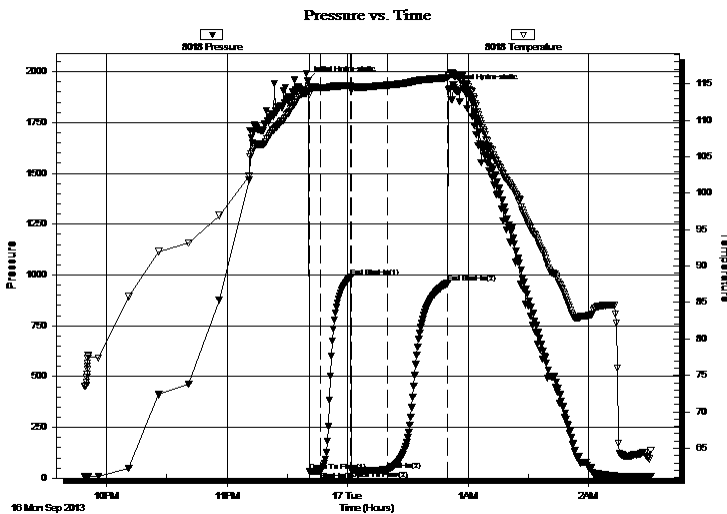
02:31:10

Time On Btm: 2013.09.16 @ 23:40:00

Time Off Btm: 2013.09.17 @ 00:51:00

TEST COMMENT: Surface blow .
No return.
Weak surface blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1955.10	113.96	Initial Hydro-static
1	31.35	113.55	Open To Flow (1)
7	35.49	114.47	Shut-In(1)
22	991.11	114.71	End Shut-In(1)
22	36.74	114.10	Open To Flow (2)
40	40.90	114.79	Shut-In(2)
70	962.19	115.82	End Shut-In(2)
71	1916.98	116.15	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 30o 70m	0.10

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

GENERAL INFORMATION:

Formation: **LKC 'B'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:00

Time Test Ended: 02:31:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 3961.00 ft (KB) To 3983.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 3983.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 3962.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.16

End Date: 2013.09.17

Last Calib.: 2013.09.17

Start Time: 21:49:01

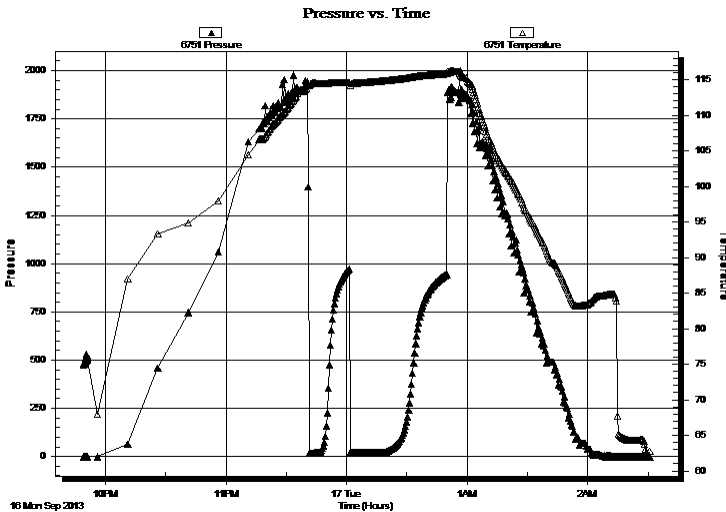
End Time: 02:31:00

Time On Btm:

Time Off Btm:

TEST COMMENT: Surface blow .
No return.
Weak surface blow .
No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 30o 70m	0.10

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

Tool Information

Drill Pipe:	Length: 3794.00 ft	Diameter: 3.80 inches	Volume: 53.22 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 53.95 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	8.50 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	3961.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	22.00 ft				
Tool Length:	49.50 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

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

Change Over Sub	1.00			3934.50	
Shut In Tool	5.00			3939.50	
Hydraulic tool	5.00			3944.50	
Jars	5.00			3949.50	
Safety Joint	2.50			3952.00	
Packer	5.00			3957.00	27.50 Bottom Of Top Packer
Packer	4.00			3961.00	
Stubb	1.00			3962.00	
Perforations	0.00			3962.00	
Recorder	0.00	8018	Inside	3962.00	
Recorder	0.00	6751	Outside	3962.00	
Perforations	18.00			3980.00	
Bullnose	3.00			3983.00	22.00 Bottom Packers & Anchor

Total Tool Length: 49.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.76 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 30o 70m	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

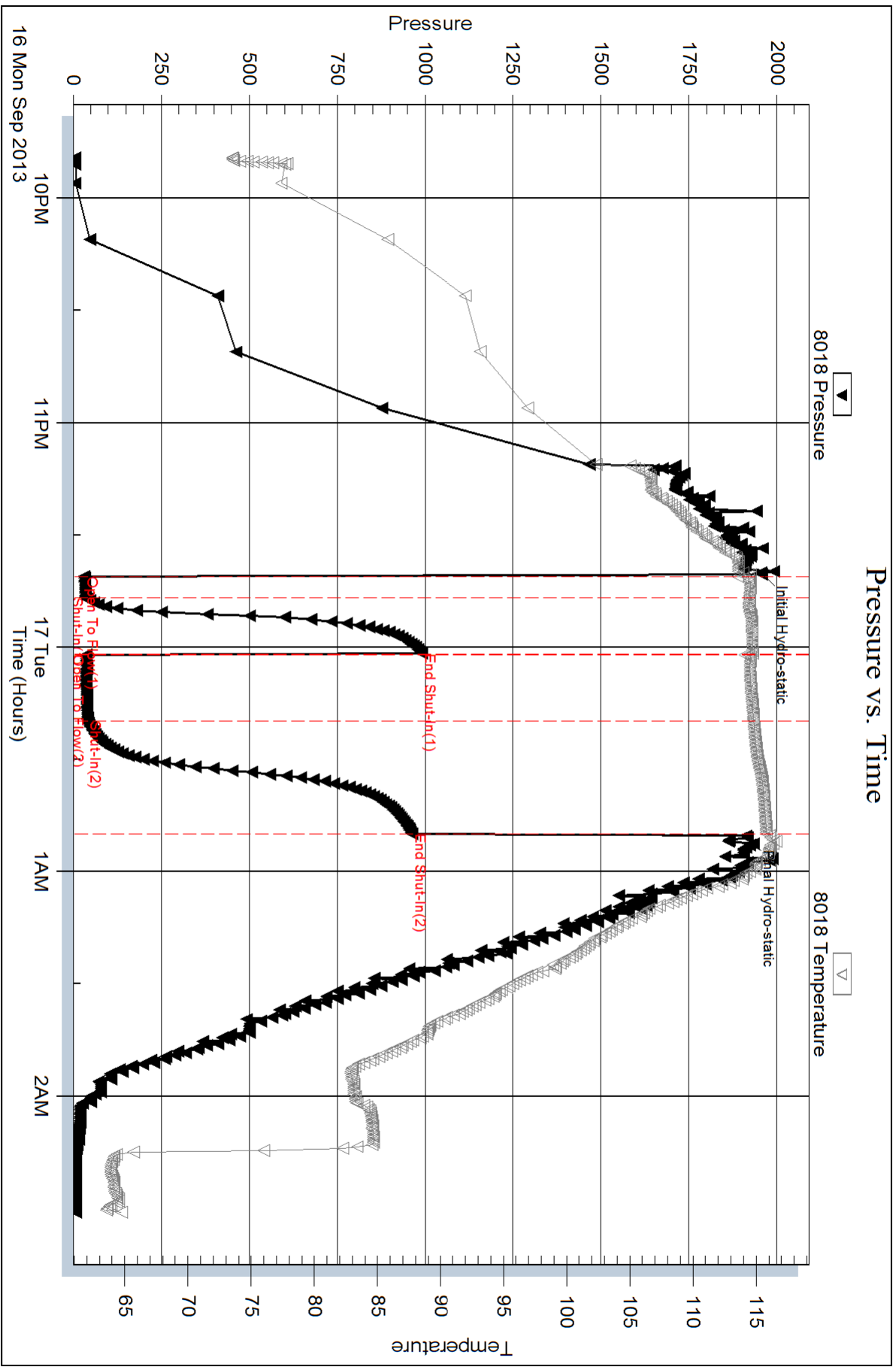
Num Gas Bombs: 0

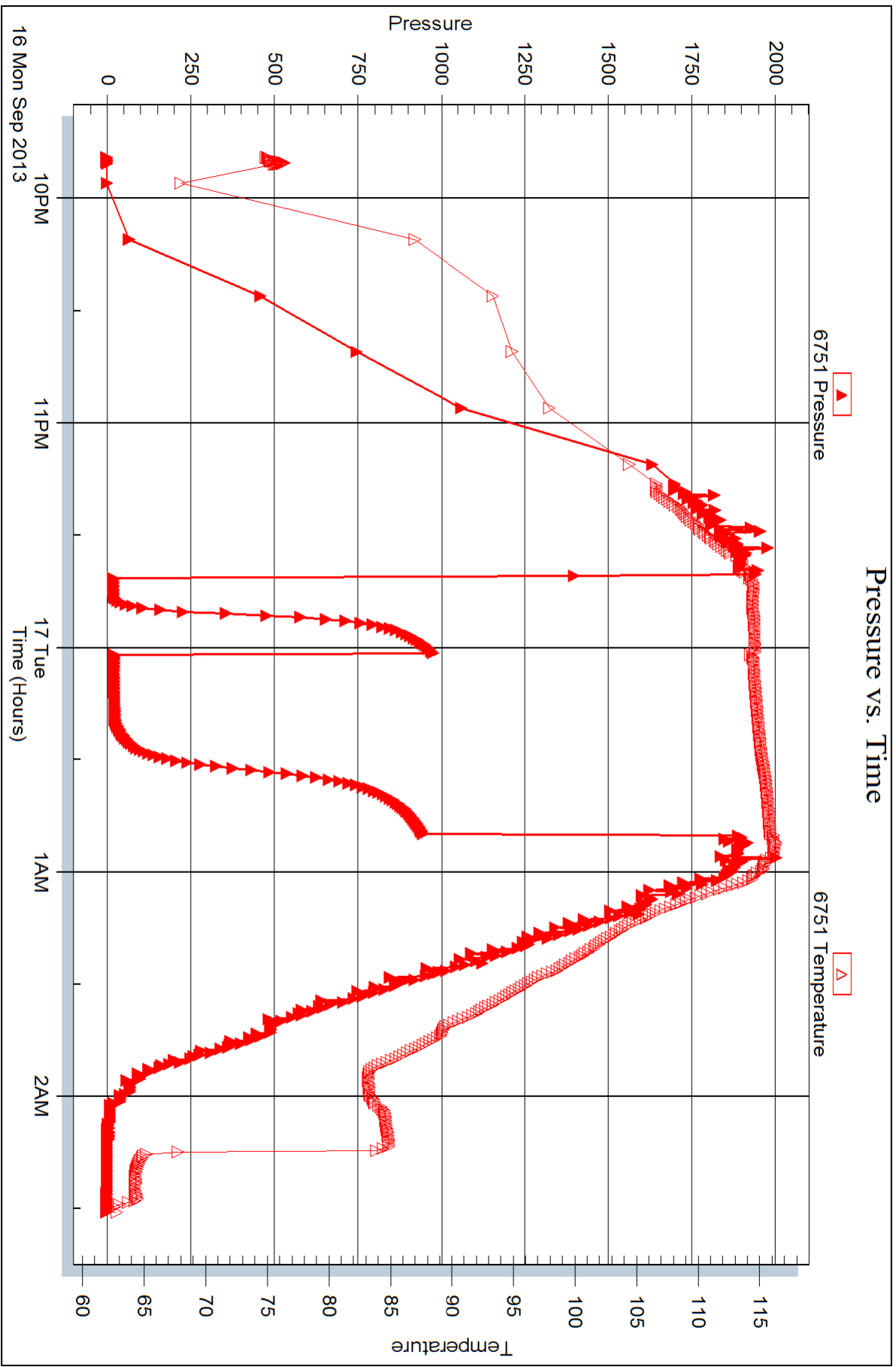
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.17 @ 23:15:09

End Date: 2013.09.18 @ 04:27:18

Job Ticket #: 52939 DST #: 2

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

Printed: 2013.09.24 @ 10:09:17

Larson Engineering, Inc.
S20-18s-30w Lane KS
Cleo #1-20
DST # 2
LKC: H
2013.09.17



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52939

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.17 @ 23:15:09

GENERAL INFORMATION:

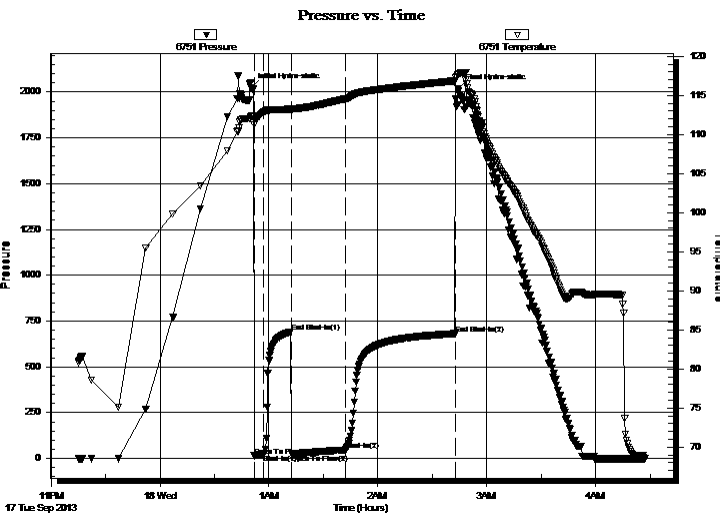
Formation: **LKC 'H'**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 00:51:48
 Tester: Chuck Smith
 Time Test Ended: 04:27:18
 Unit No: 62
 Interval: **4113.00 ft (KB) To 4135.00 ft (KB) (TVD)**
 Reference Elevations: 2898.00 ft (KB)
 Total Depth: 4135.00 ft (KB) (TVD)
 2891.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 7.00 ft

Serial #: 6751

Outside

Press @ Run Depth: 46.42 psig @ 4114.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.17 End Date: 2013.09.18 Last Calib.: 2013.09.18
 Start Time: 23:15:09 End Time: 04:27:18 Time On Btm: 2013.09.18 @ 00:50:08
 Time Off Btm: 2013.09.18 @ 02:44:08

TEST COMMENT: 1/2" Blow .
 No return.
 3" Blow .
 No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2021.73	112.28	Initial Hydro-static
2	14.64	111.25	Open To Flow (1)
7	22.36	112.91	Shut-In(1)
22	691.01	113.27	End Shut-In(1)
23	25.17	112.97	Open To Flow (2)
53	46.42	114.59	Shut-In(2)
113	681.28	116.87	End Shut-In(2)
114	2019.26	117.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM 20o 80m	0.30
40.00	GO 10g 90o	0.20

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 52939

DST#: 2

Test Start: 2013.09.17 @ 23:15:09

GENERAL INFORMATION:

Formation: **LKC 'H'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:51:48
 Time Test Ended: 04:27:18
 Interval: **4113.00 ft (KB) To 4135.00 ft (KB) (TVD)**
 Total Depth: 4135.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 62
 Reference Elevations: 2898.00 ft (KB)
 2891.00 ft (CF)
 KB to GR/CF: 7.00 ft

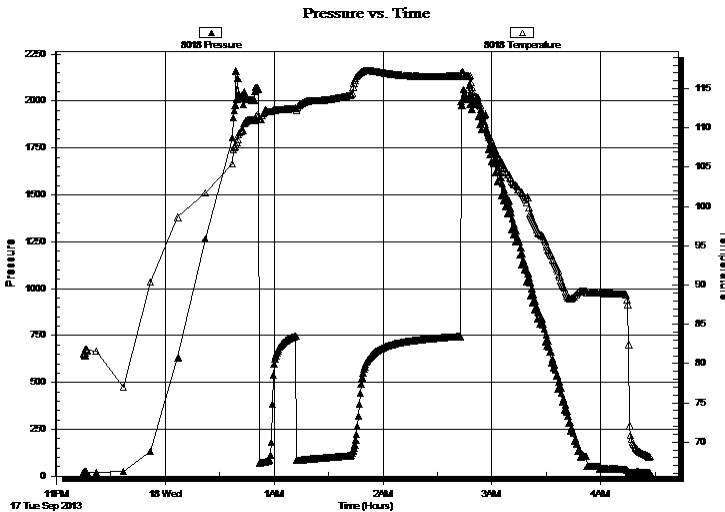
Serial #: 8018

Inside

Press @RunDepth: psig @ 4114.00 ft (KB)
 Start Date: 2013.09.17 End Date: 2013.09.18
 Start Time: 23:15:02 End Time: 04:27:10
 Capacity: 8000.00 psig
 Last Calib.: 2013.09.18
 Time On Btm:
 Time Off Btm:

TEST COMMENT: 1/2" Blow .
 No return.
 3" Blow .
 No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM 20o 80m	0.30
40.00	GO 10g 90o	0.20

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52939

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.17 @ 23:15:09

Tool Information

Drill Pipe:	Length: 3948.00 ft	Diameter: 3.80 inches	Volume: 55.38 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 56.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.50 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4113.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	49.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4086.50	
Shut In Tool	5.00			4091.50	
Hydraulic tool	5.00			4096.50	
Jars	5.00			4101.50	
Safety Joint	2.50			4104.00	
Packer	5.00			4109.00	27.50 Bottom Of Top Packer
Packer	4.00			4113.00	
Stubb	1.00			4114.00	
Perforations	0.00			4114.00	
Recorder	0.00	8018	Inside	4114.00	
Recorder	0.00	6751	Outside	4114.00	
Perforations	18.00			4132.00	
Bullnose	3.00			4135.00	22.00 Bottom Packers & Anchor

Total Tool Length: 49.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52939

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.17 @ 23:15:09

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 54.00 sec/qt
Water Loss: 7.95 in³
Resistivity: ohm.m
Salinity: 2400.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 33 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCM 20o 80m	0.295
40.00	GO 10g 90o	0.197

Total Length: 100.00 ft Total Volume: 0.492 bbl

Num Fluid Samples: 0

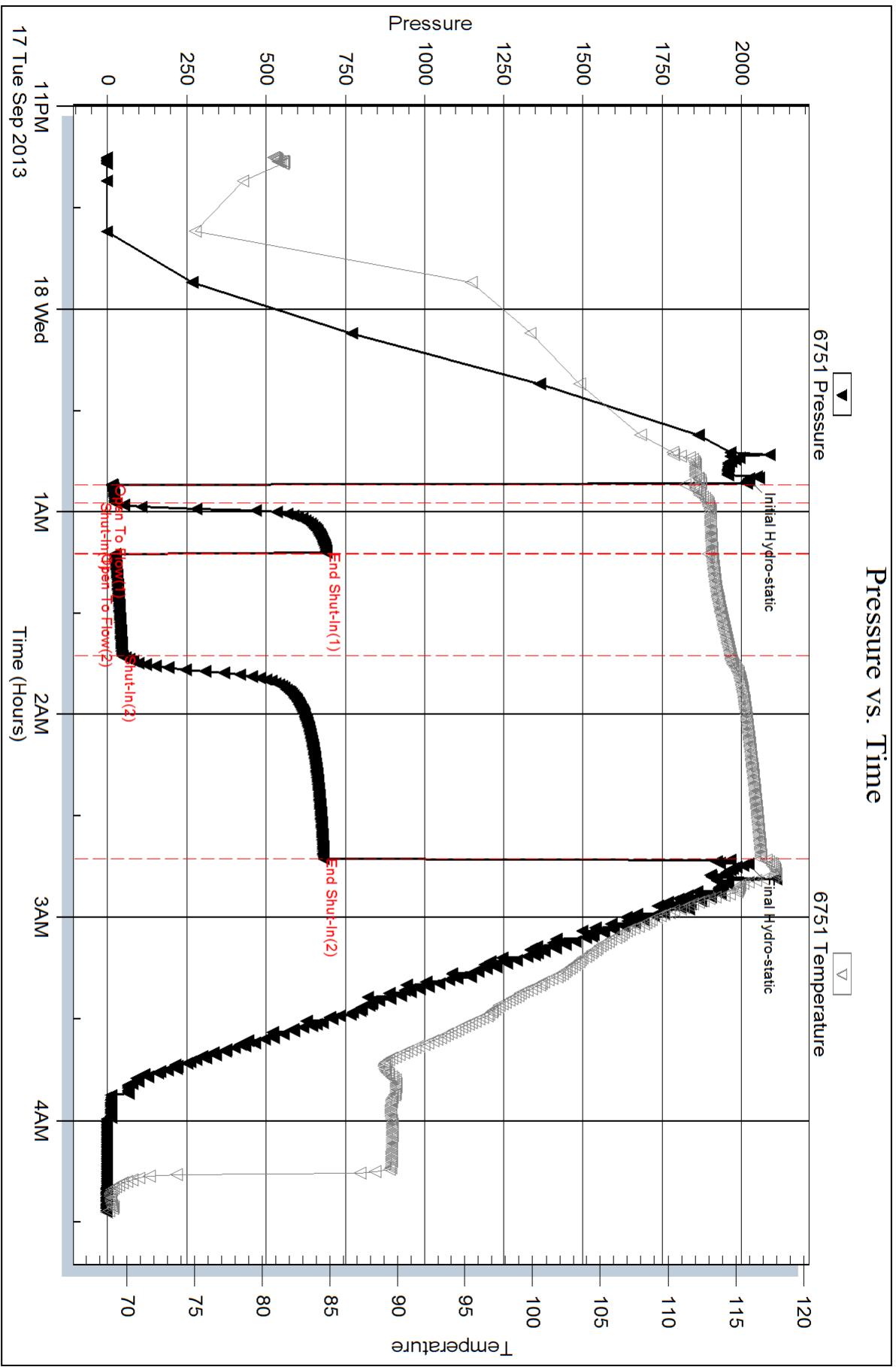
Num Gas Bombs: 0

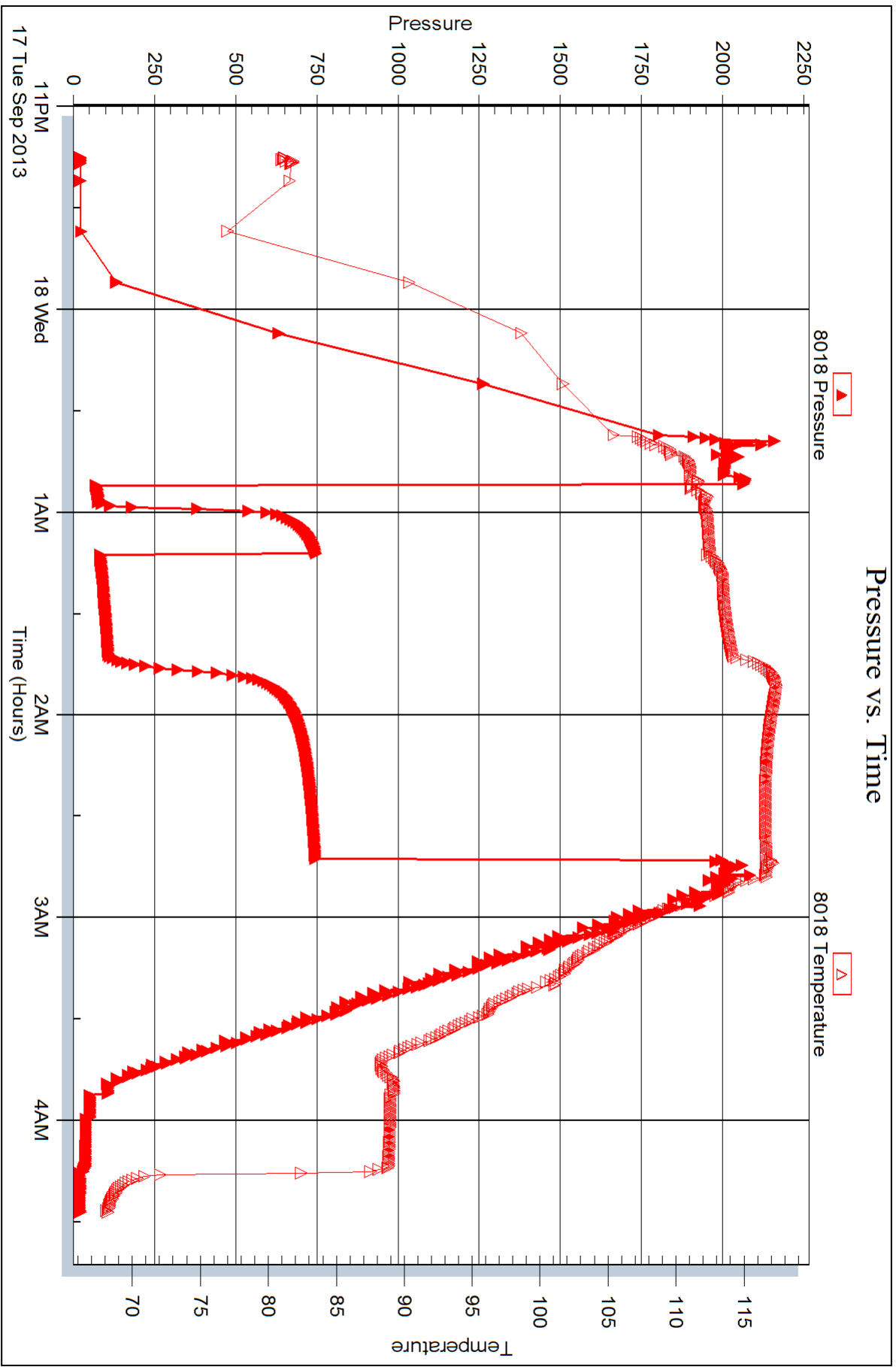
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 34 @ 70 Degrees F = 33.







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.18 @ 14:10:00

End Date: 2013.09.18 @ 19:15:09

Job Ticket #: 52940 DST #: 3

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

Printed: 2013.09.24 @ 10:08:52



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52940

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.18 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC 'I'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:48:20

Time Test Ended: 19:15:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4160.00 ft (KB) To 4185.00 ft (KB) (TVD)

Total Depth: 4185.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ Run Depth: 27.97 psig @ 4162.00 ft (KB)

Start Date: 2013.09.18

End Date: 2013.09.18

Start Time: 14:10:05

End Time: 19:15:10

Capacity: 8000.00 psig

Last Calib.: 2013.09.18

Time On Btm: 2013.09.18 @ 15:47:10

Time Off Btm: 2013.09.18 @ 17:40:10

TEST COMMENT: Weak surface blow .

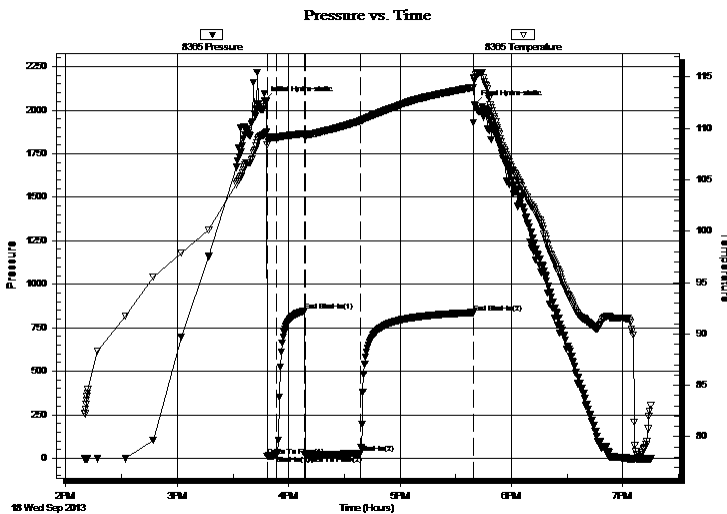
No return.

1/2" Blow .

Weak surface return died @ 14 min.

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2053.02	109.43	Initial Hydro-static
2	13.23	108.38	Open To Flow (1)
7	16.54	109.09	Shut-In(1)
22	846.19	109.50	End Shut-In(1)
22	17.42	109.13	Open To Flow (2)
52	27.97	110.71	Shut-In(2)
113	836.95	113.99	End Shut-In(2)
113	2030.06	114.94	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 8o 92m	0.15

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 52940

DST#: 3

Test Start: 2013.09.18 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC 'I'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:48:20

Time Test Ended: 19:15:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4160.00 ft (KB) To 4185.00 ft (KB) (TVD)

Total Depth: 4185.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6751

Outside

Press @ Run Depth: psig @ 4162.00 ft (KB)

Start Date: 2013.09.18

End Date:

2013.09.18

Start Time: 14:09:55

End Time:

19:15:04

Capacity: 8000.00 psig

Last Calib.:

2013.09.18

Time On Btm:

Time Off Btm:

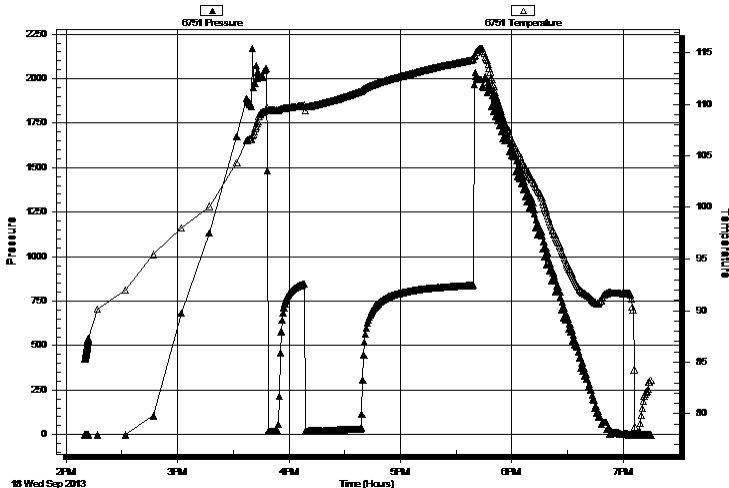
TEST COMMENT: Weak surface blow .

No return.

1/2" Blow .

Weak surface return died @ 14 min.

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 80 to 92m	0.15

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52940

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.18 @ 14:10:00

Tool Information

Drill Pipe:	Length: 4010.00 ft	Diameter: 3.80 inches	Volume: 56.25 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 56.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.50 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4160.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	52.50 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			4133.50	
Shut In Tool	5.00			4138.50	
Hydraulic tool	5.00			4143.50	
Jars	5.00			4148.50	
Safety Joint	2.50			4151.00	
Packer	5.00			4156.00	27.50 Bottom Of Top Packer
Packer	4.00			4160.00	
Stubb	1.00			4161.00	
Perforations	1.00			4162.00	
Recorder	0.00	8365	Inside	4162.00	
Recorder	0.00	6751	Outside	4162.00	
Perforations	20.00			4182.00	
Bullnose	3.00			4185.00	25.00 Bottom Packers & Anchor

Total Tool Length: 52.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52940

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.18 @ 14:10:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.56 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	OCM 8o 92m	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

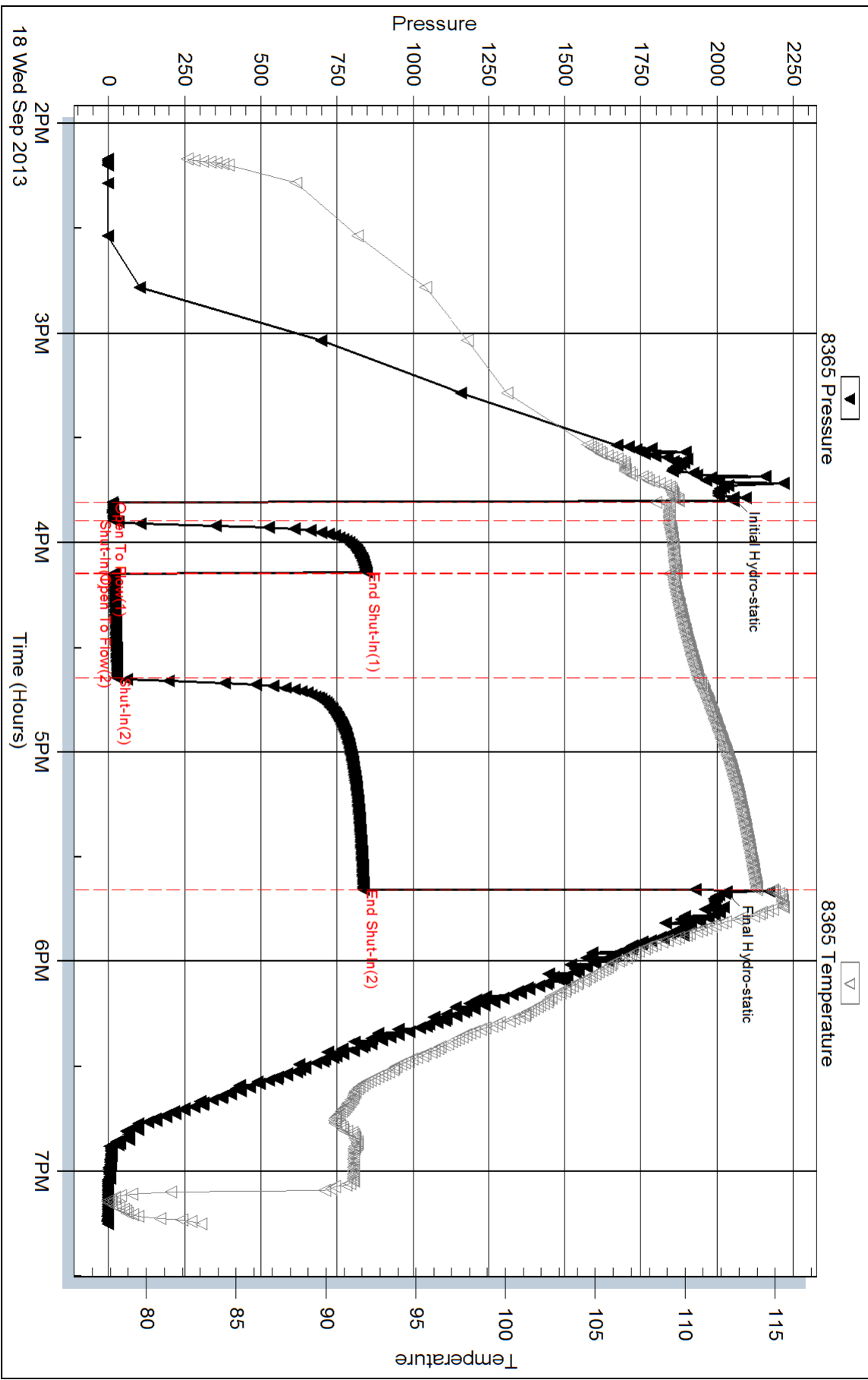
Serial #:

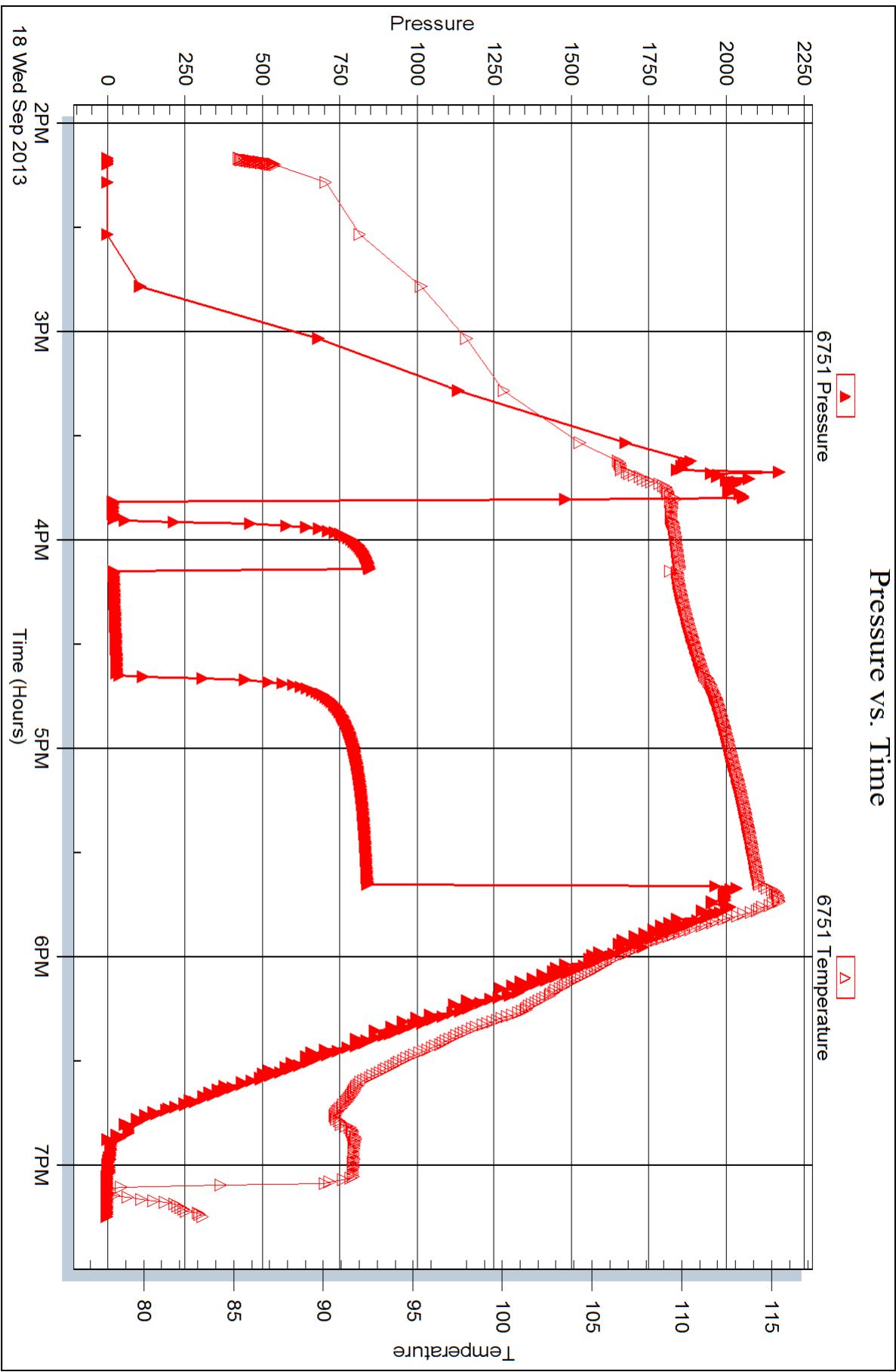
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.19 @ 05:40:00

End Date: 2013.09.19 @ 10:28:00

Job Ticket #: 52941 DST #: 4

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

Printed: 2013.09.24 @ 10:08:26

Larson Engineering, Inc.
S20-18s-30w Lane KS
Cleo #1-20
DST # 4
LKC:J
2013.09.19



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52941

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 05:40:00

GENERAL INFORMATION:

Formation: **LKC 'J'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:49:10

Time Test Ended: 10:28:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4202.00 ft (KB) To 4218.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4218.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ Run Depth: 22.82 psig @ 4205.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.19

End Date:

2013.09.19

Last Calib.:

2013.09.19

Start Time: 05:40:05

End Time:

10:27:59

Time On Btm:

2013.09.19 @ 07:47:40

Time Off Btm:

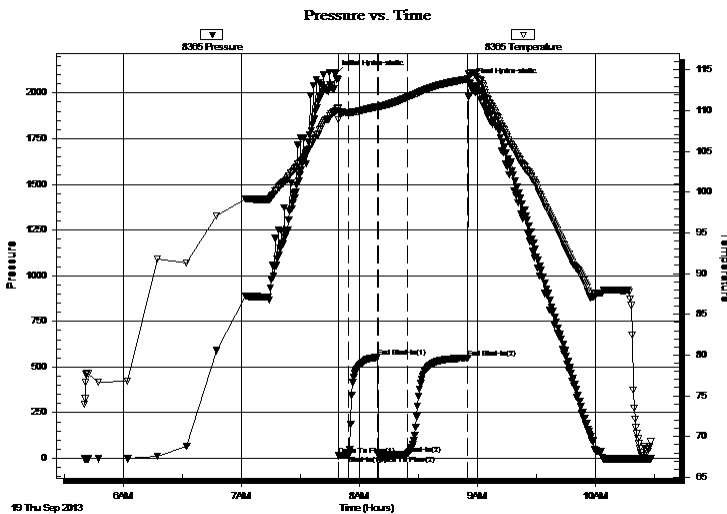
2013.09.19 @ 08:55:50

TEST COMMENT: 1/4" Blow .

No return.

Surface blow .

No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2100.92	109.86	Initial Hydro-static
2	14.25	108.93	Open To Flow (1)
7	17.83	109.74	Shut-In(1)
22	552.86	110.51	End Shut-In(1)
22	18.47	110.48	Open To Flow (2)
37	22.82	111.61	Shut-In(2)
68	548.52	113.87	End Shut-In(2)
69	2057.00	114.57	Final Hydro-static

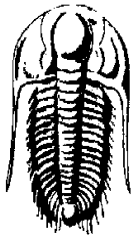
Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 20o 80m	0.05

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

S20-18s-30w Lane KS
Cleo #1-20
Job Ticket: 52941 **DST#: 4**
Test Start: 2013.09.19 @ 05:40:00

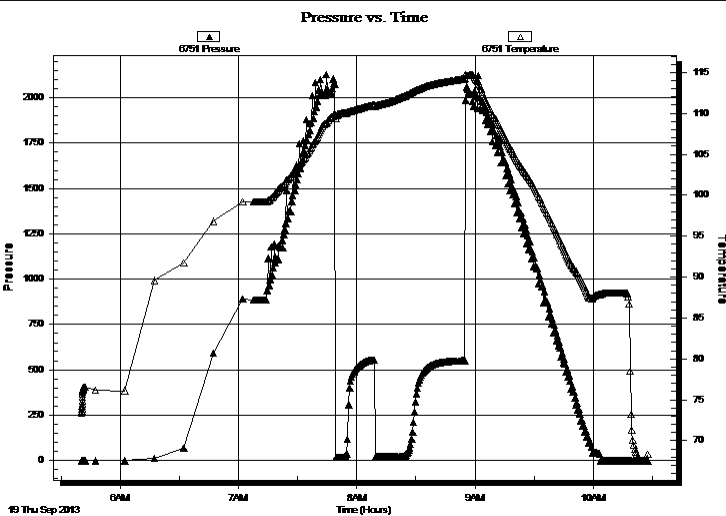
GENERAL INFORMATION:

Formation: **LKC 'J'**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 07:49:10 Tester: Chuck Smith
Time Test Ended: 10:28:00 Unit No: 62
Interval: 4202.00 ft (KB) To 4218.00 ft (KB) (TVD) Reference Elevations: 2898.00 ft (KB)
Total Depth: 4218.00 ft (KB) (TVD) 2891.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @RunDepth: psig @ 4205.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.09.19 End Date: 2013.09.19 Last Calib.: 2013.09.19
Start Time: 05:40:01 End Time: 10:28:00 Time On Btm:
Time Off Btm:

TEST COMMENT: 1/4" Blow .
No return.
Surface blow .
No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 20o 80m	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, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52941

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 05:40:00

Tool Information

Drill Pipe:	Length: 4042.00 ft	Diameter: 3.80 inches	Volume: 56.70 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 57.43 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4202.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	43.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4175.50	
Shut In Tool	5.00			4180.50	
Hydraulic tool	5.00			4185.50	
Jars	5.00			4190.50	
Safety Joint	2.50			4193.00	
Packer	5.00			4198.00	27.50 Bottom Of Top Packer
Packer	4.00			4202.00	
Stubb	1.00			4203.00	
Perforations	2.00			4205.00	
Recorder	0.00	8365	Inside	4205.00	
Recorder	0.00	6751	Outside	4205.00	
Perforations	10.00			4215.00	
Bullnose	3.00			4218.00	16.00 Bottom Packers & Anchor

Total Tool Length: 43.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52941

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 05:40:00

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: 52.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 2800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM 20o 80m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

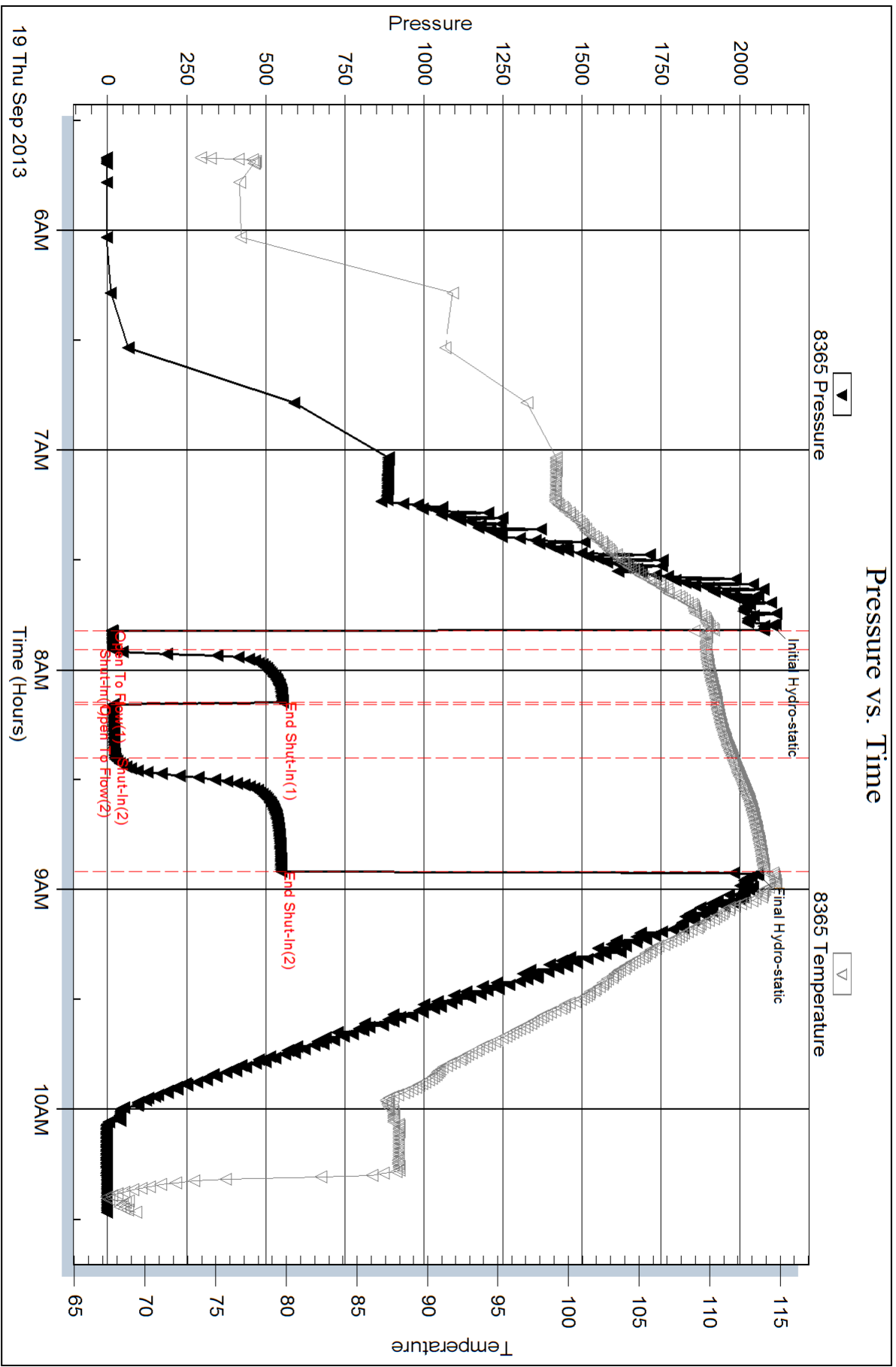
Num Gas Bombs: 0

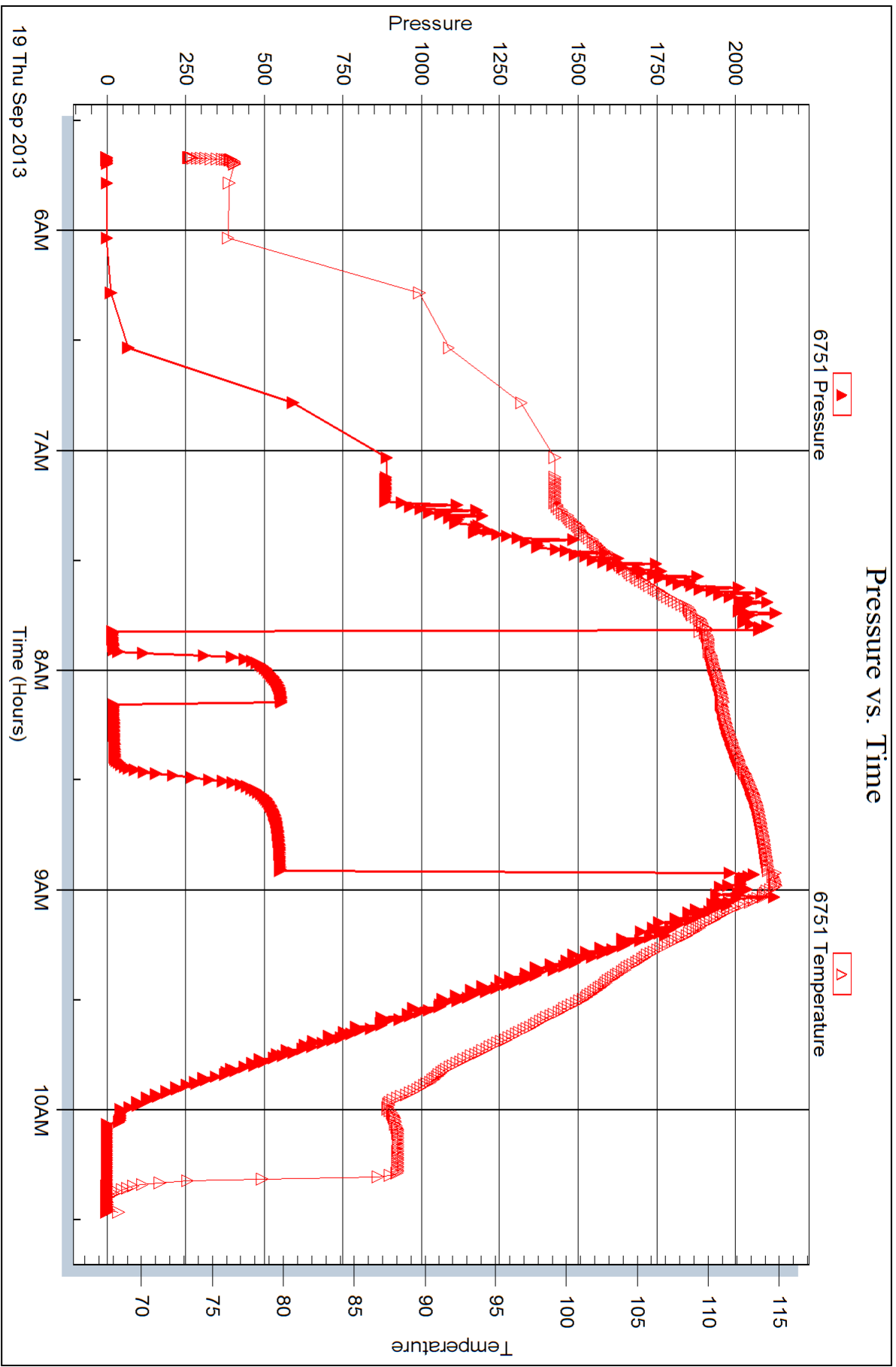
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.19 @ 17:30:00

End Date: 2013.09.19 @ 23:14:50

Job Ticket #: 52942 DST #: 5

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

Printed: 2013.09.24 @ 10:08:00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52942

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 17:30:00

GENERAL INFORMATION:

Formation: **LKC "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:28:50

Time Test Ended: 23:14:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4216.00 ft (KB) To 4232.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4232.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ RunDepth: 155.89 psig @ 4217.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.19

End Date: 2013.09.19

Last Calib.: 2013.09.19

Start Time: 17:30:05

End Time: 23:14:50

Time On Btm: 2013.09.19 @ 19:26:40

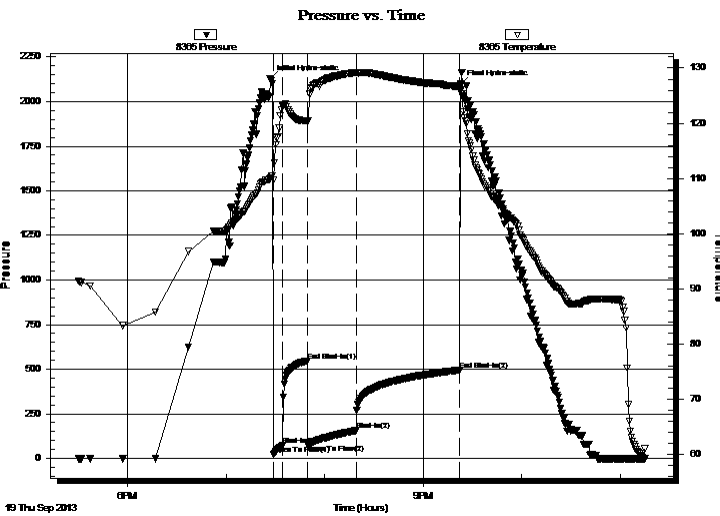
Time Off Btm: 2013.09.19 @ 21:22:30

TEST COMMENT: 6" Blow.

No return.

B.O.B. @ 19 min

No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2126.26	109.90	Initial Hydro-static
3	21.51	109.68	Open To Flow (1)
8	71.61	123.31	Shut-In(1)
23	546.21	120.42	End Shut-In(1)
23	78.06	120.28	Open To Flow (2)
53	155.89	129.18	Shut-In(2)
116	494.95	126.53	End Shut-In(2)
116	2094.56	127.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	WM35w 65m	2.02
70.00	OSWM 15w 85m	0.98
2.00	O 100o	0.03

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52942

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 17:30:00

GENERAL INFORMATION:

Formation: **LKC "K"**

Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 19:28:50 Tester: Chuck Smith

Time Test Ended: 23:14:50 Unit No: 62

Interval: 4216.00 ft (KB) To 4232.00 ft (KB) (TVD) Reference Elevations: 2898.00 ft (KB)

Total Depth: 4232.00 ft (KB) (TVD) 2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 6751

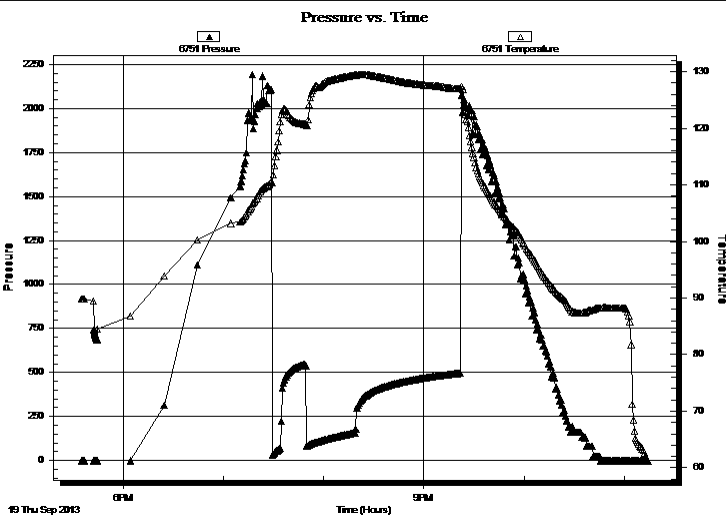
Outside

Press @ RunDepth: psig @ 4217.00 ft (KB) Capacity: 8000.00 psig

Start Date: 2013.09.19 End Date: 2013.09.19 Last Calib.: 2013.09.19

Start Time: 17:35:06 End Time: 23:14:27 Time On Btm: Time Off Btm:

TEST COMMENT: 6" Blow .
No return.
B.O.B. @ 19 min
No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
240.00	WM 35w 65m	2.02
70.00	OSWM 15w 85m	0.98
2.00	O 100o	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, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52942

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 17:30:00

Tool Information

Drill Pipe:	Length: 4044.00 ft	Diameter: 3.80 inches	Volume: 56.73 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.46 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	3.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4216.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	43.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4189.50	
Shut In Tool	5.00			4194.50	
Hydraulic tool	5.00			4199.50	
Jars	5.00			4204.50	
Safety Joint	2.50			4207.00	
Packer	5.00			4212.00	27.50 Bottom Of Top Packer
Packer	4.00			4216.00	
Stubb	1.00			4217.00	
Perforations	0.00			4217.00	
Recorder	0.00	8365	Inside	4217.00	
Recorder	0.00	6751	Outside	4217.00	
Perforations	12.00			4229.00	
Bullnose	3.00			4232.00	16.00 Bottom Packers & Anchor

Total Tool Length: 43.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52942

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 17:30:00

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:

43000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
240.00	WM 35w 65m	2.018
70.00	OSWM 15w 85m	0.982
2.00	O 100o	0.028

Total Length: 312.00 ft Total Volume: 3.028 bbl

Num Fluid Samples: 0

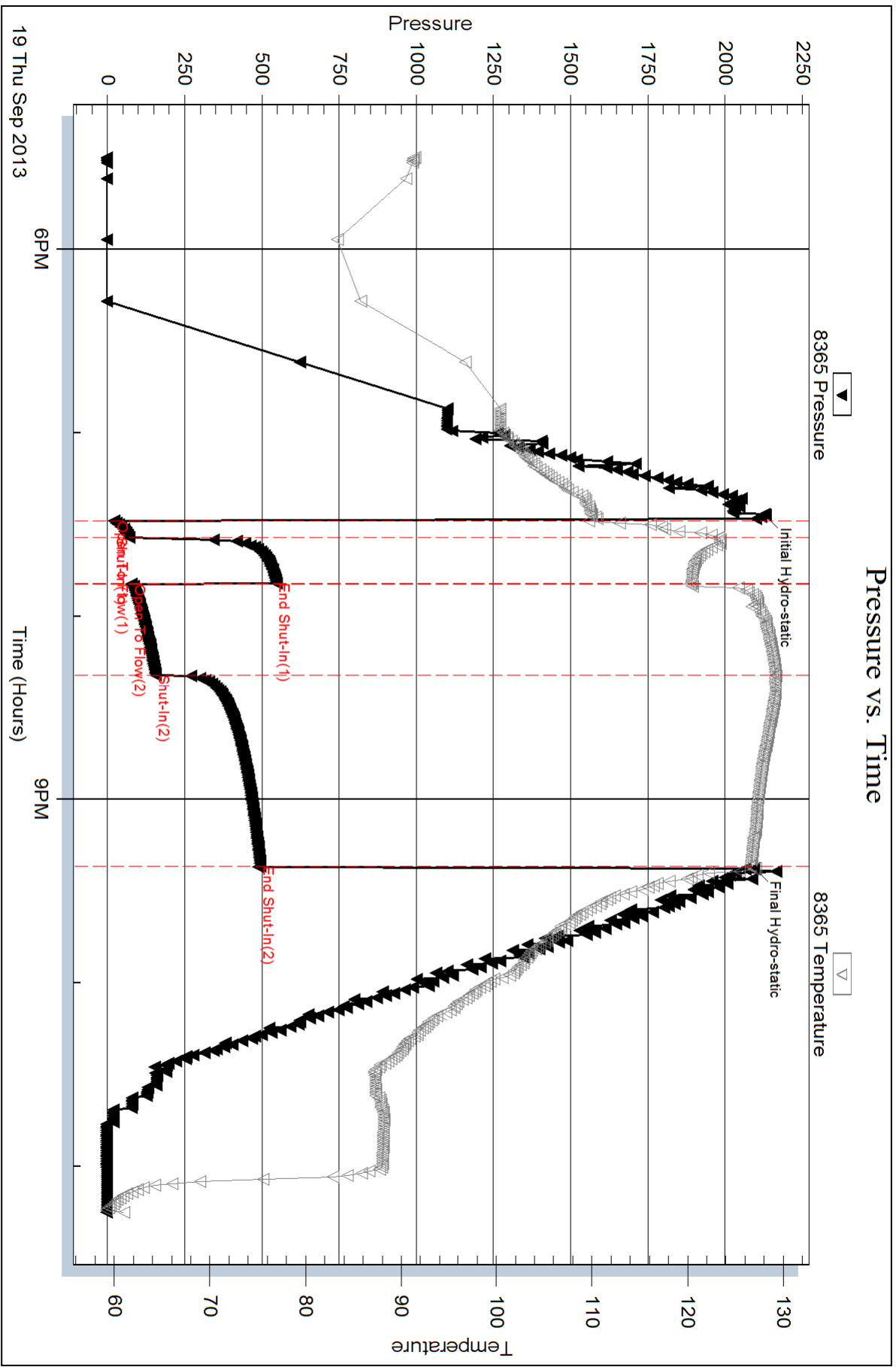
Num Gas Bombs: 0

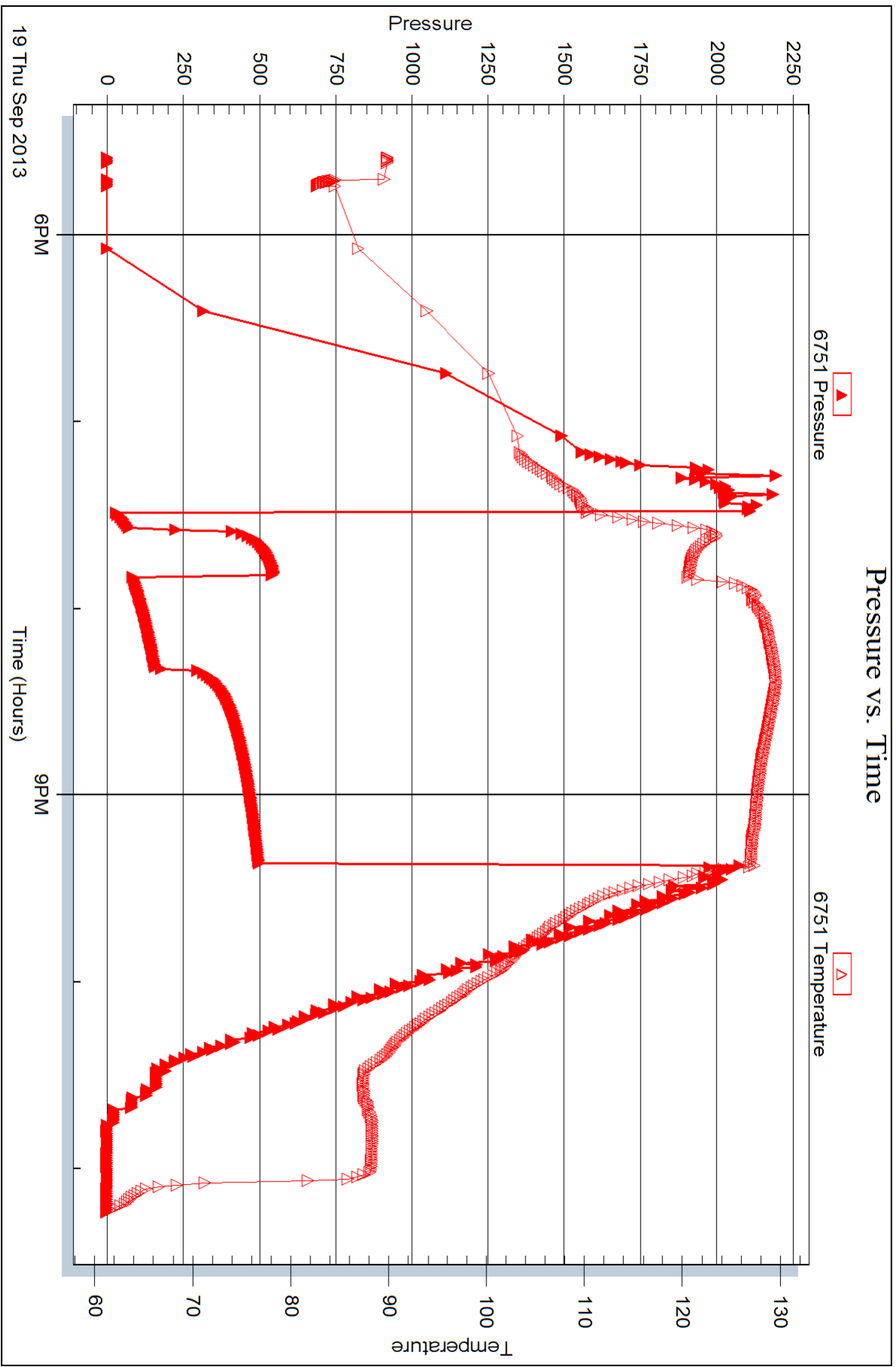
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .221 @ 55 Degrees F = 43000 PPM







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.20 @ 06:49:00

End Date: 2013.09.20 @ 11:22:09

Job Ticket #: 52943 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.09.24 @ 10:07:08



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52943

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 06:49:00

GENERAL INFORMATION:

Formation: **Middle Creek**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:38:20

Time Test Ended: 11:22:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4256.00 ft (KB) To 4265.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4265.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ Run Depth: 24.52 psig @ 4257.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.20

End Date: 2013.09.20

Last Calib.: 2013.09.20

Start Time: 06:49:05

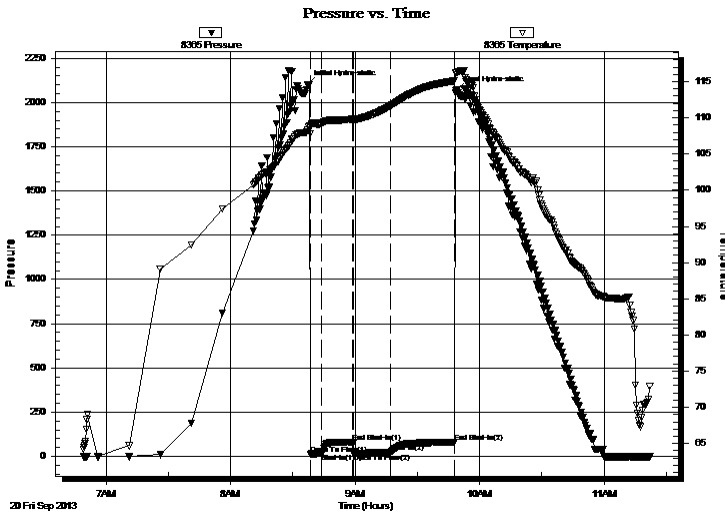
End Time: 11:22:10

Time On Btm: 2013.09.20 @ 08:37:00

Time Off Btm: 2013.09.20 @ 09:48:40

TEST COMMENT: 1/2" Blow .
No return.
3/4" Blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2103.28	108.38	Initial Hydro-static
2	13.55	107.84	Open To Flow (1)
7	16.81	109.17	Shut-In(1)
22	81.79	109.80	End Shut-In(1)
23	17.58	109.79	Open To Flow (2)
40	24.52	111.66	Shut-In(2)
71	79.14	115.10	End Shut-In(2)
72	2064.39	116.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 7o 93m	0.15

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52943

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 06:49:00

GENERAL INFORMATION:

Formation: **Middle Creek**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:38:20

Time Test Ended: 11:22:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4256.00 ft (KB) To 4265.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4265.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4257.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.20

End Date: 2013.09.20

Last Calib.: 2013.09.20

Start Time: 06:49:01

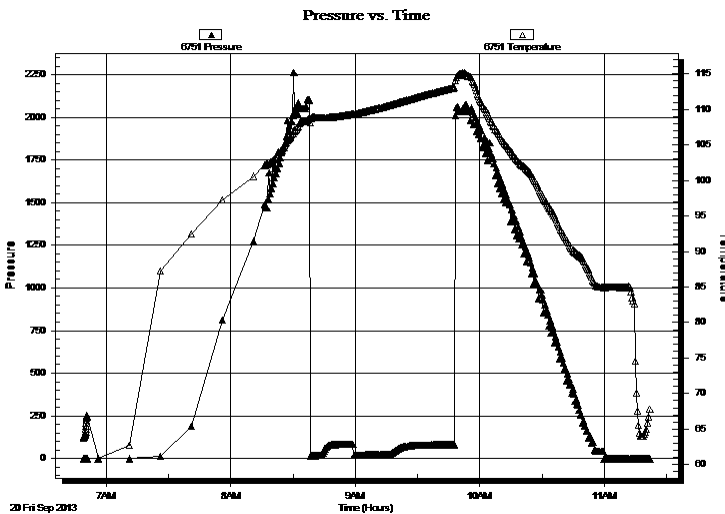
End Time: 11:22:10

Time On Btm:

Time Off Btm:

TEST COMMENT: 1/2" Blow .
No return.
3/4" Blow .
No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 7o 93m	0.15

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52943

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 06:49:00

Tool Information

Drill Pipe:	Length: 4105.00 ft	Diameter: 3.80 inches	Volume: 57.58 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.31 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4256.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	36.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4229.50	
Shut In Tool	5.00			4234.50	
Hydraulic tool	5.00			4239.50	
Jars	5.00			4244.50	
Safety Joint	2.50			4247.00	
Packer	5.00			4252.00	27.50 Bottom Of Top Packer
Packer	4.00			4256.00	
Stubb	1.00			4257.00	
Perforations	0.00			4257.00	
Recorder	0.00	8365	Inside	4257.00	
Recorder	0.00	6751	Outside	4257.00	
Perforations	5.00			4262.00	
Bullnose	3.00			4265.00	9.00 Bottom Packers & Anchor

Total Tool Length: 36.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52943

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 06:49:00

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: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	OCM 7o 93m	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

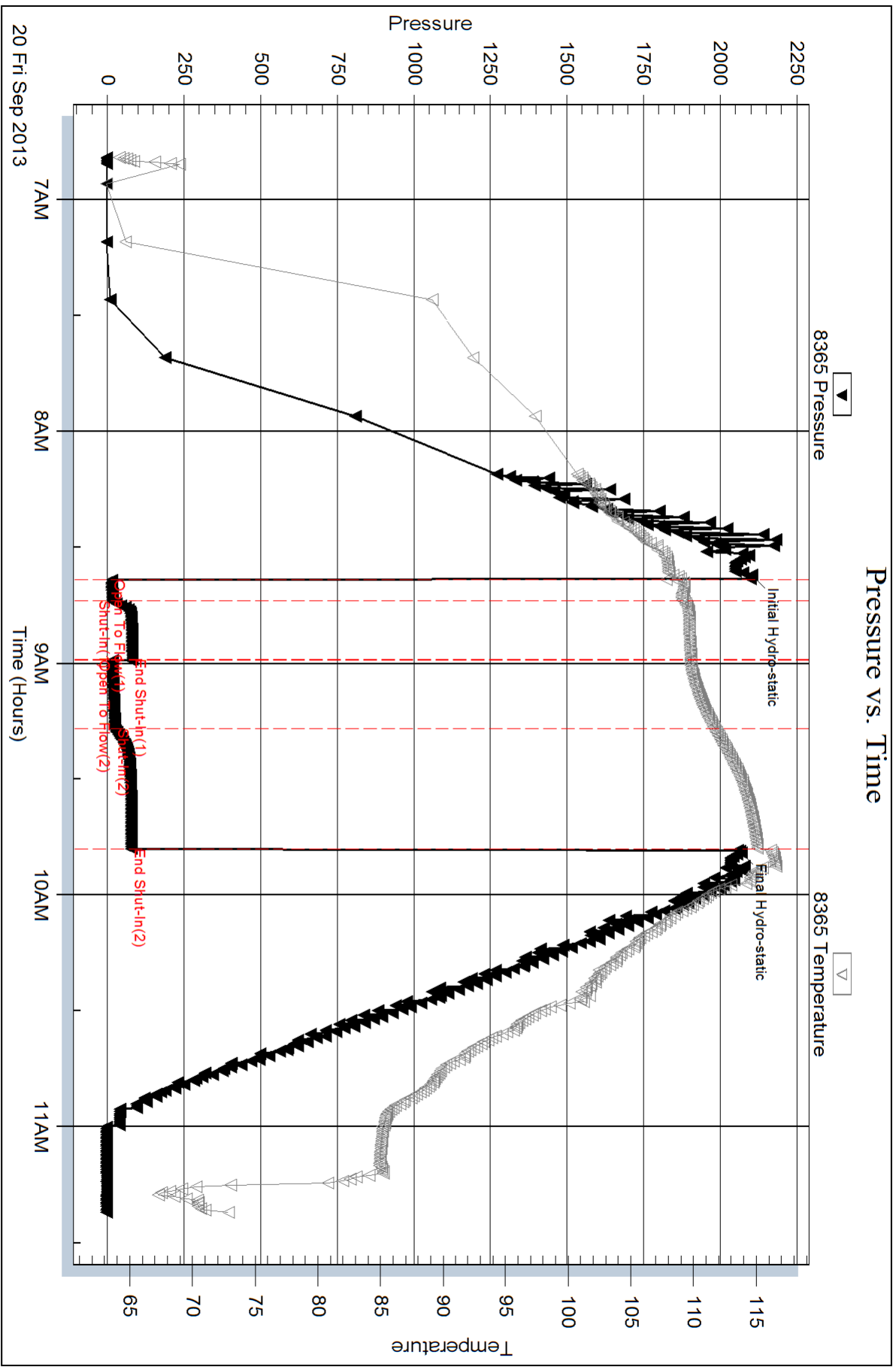
Num Gas Bombs: 0

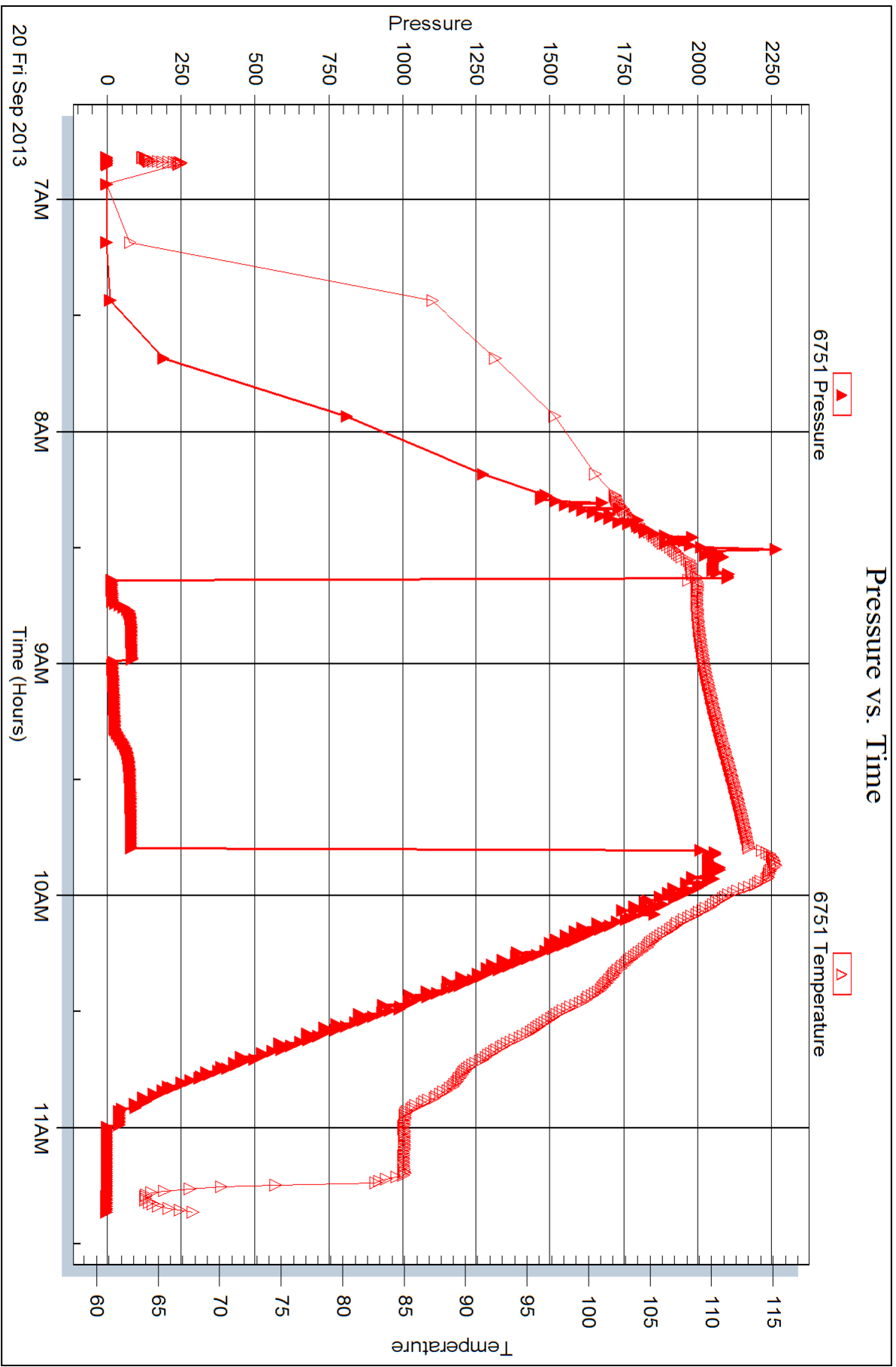
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.20 @ 20:00:00

End Date: 2013.09.21 @ 01:52:20

Job Ticket #: 52944 DST #: 7

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

Printed: 2013.09.24 @ 10:06:40

Larson Engineering, Inc.
S20-18s-30w Lane KS
Cleo #1-20
DST # 7
LKC: L
2013.09.20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

GENERAL INFORMATION:

Formation: **LKC 'L'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:50:10

Time Test Ended: 01:52:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4274.00 ft (KB) To 4287.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4287.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ RunDepth: 125.04 psig @ 4275.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.20

End Date:

2013.09.21

Last Calib.: 2013.09.21

Start Time: 20:00:01

End Time:

01:52:20

Time On Btm: 2013.09.20 @ 21:48:30

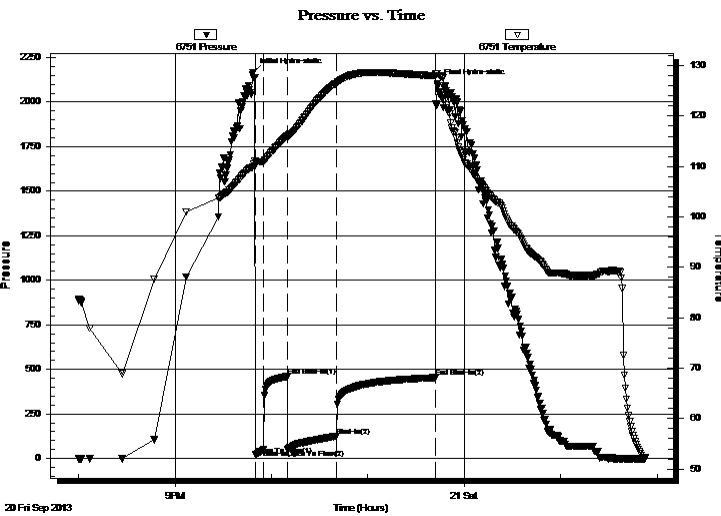
Time Off Btm: 2013.09.20 @ 23:43:20

TEST COMMENT: 3" Blow.

Very weak return.

B.O.B. @ 28 min.

No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2166.65	109.84	Initial Hydro-static
2	20.81	110.09	Open To Flow (1)
7	48.67	110.97	Shut-In(1)
22	459.99	116.08	End Shut-In(1)
22	53.18	115.86	Open To Flow (2)
52	125.04	126.49	Shut-In(2)
114	453.62	127.95	End Shut-In(2)
115	2103.78	128.37	Final Hydro-static

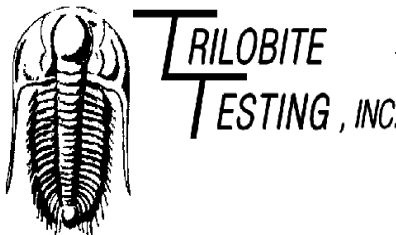
Recovery

Length (ft)	Description	Volume (bbl)
180.00	MW 20m 80w	1.18
64.00	OSWM 30w 70m	0.90
1.00	O 100o	0.01

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

GENERAL INFORMATION:

Formation: **LKC 'L'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:50:10

Time Test Ended: 01:52:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4274.00 ft (KB) To 4287.00 ft (KB) (TVD)

Total Depth: 4287.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8365 Inside

Press@RunDepth: psig @ 4275.00 ft (KB)

Start Date: 2013.09.20

Start Time: 20:00:05

End Date:

End Time:

2013.09.21

01:52:29

Capacity: 8000.00 psig

Last Calib.: 2013.09.21

Time On Btm:

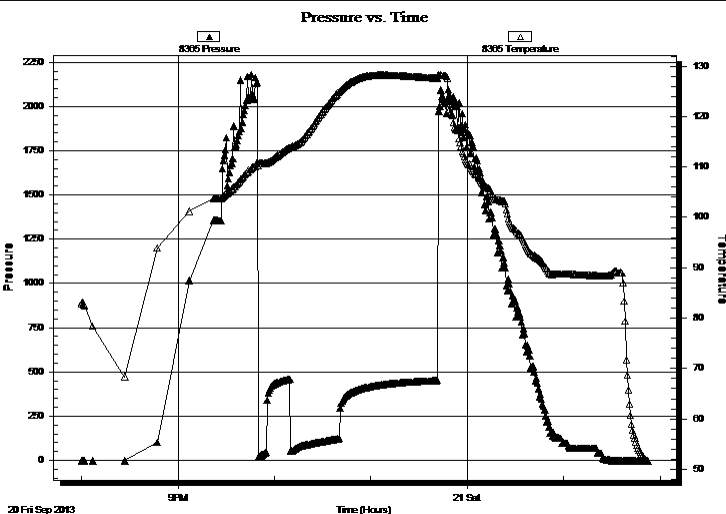
Time Off Btm:

TEST COMMENT: 3" Blow.

Very weak return.

B.O.B. @ 28 min.

No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MW 20m 80w	1.18
64.00	OSWM 30w 70m	0.90
1.00	O 100o	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

Tool Information

Drill Pipe:	Length: 4107.00 ft	Diameter: 3.80 inches	Volume: 57.61 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 58.34 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	8.50 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4274.00 ft			Final	59000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	13.00 ft				
Tool Length:	40.50 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Change Over Sub	1.00			4247.50	
Shut In Tool	5.00			4252.50	
Hydraulic tool	5.00			4257.50	
Jars	5.00			4262.50	
Safety Joint	2.50			4265.00	
Packer	5.00			4270.00	27.50 Bottom Of Top Packer
Packer	4.00			4274.00	
Stubb	1.00			4275.00	
Perforations	0.00			4275.00	
Recorder	0.00	8365	Inside	4275.00	
Recorder	0.00	6751	Outside	4275.00	
Perforations	9.00			4284.00	
Bullnose	3.00			4287.00	13.00 Bottom Packers & Anchor

Total Tool Length: 40.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

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:

55000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
180.00	MW 20m 80w	1.177
64.00	OSWM 30w 70m	0.898
1.00	O 100o	0.014

Total Length: 245.00 ft Total Volume: 2.089 bbl

Num Fluid Samples: 0

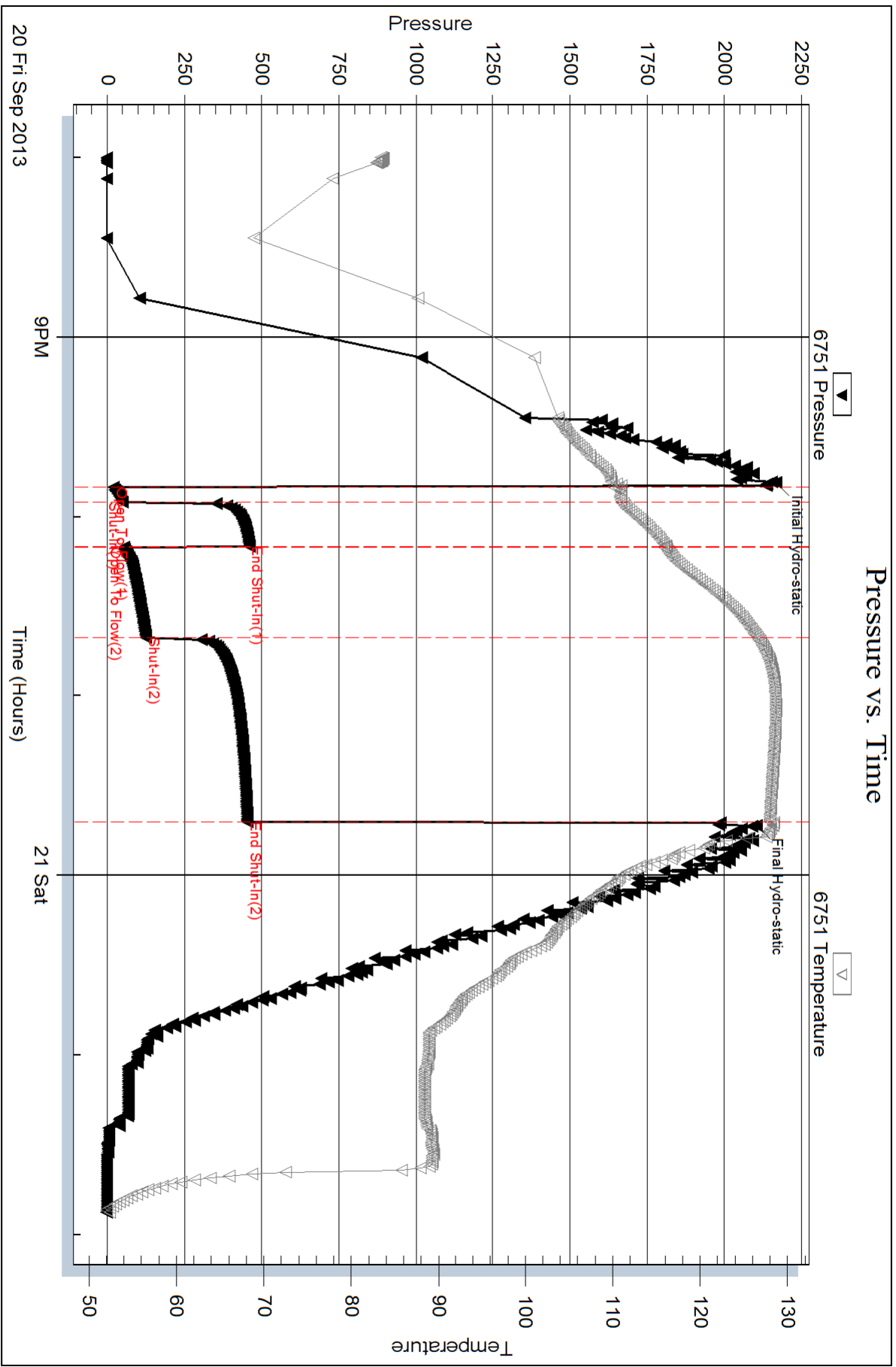
Num Gas Bombs: 0

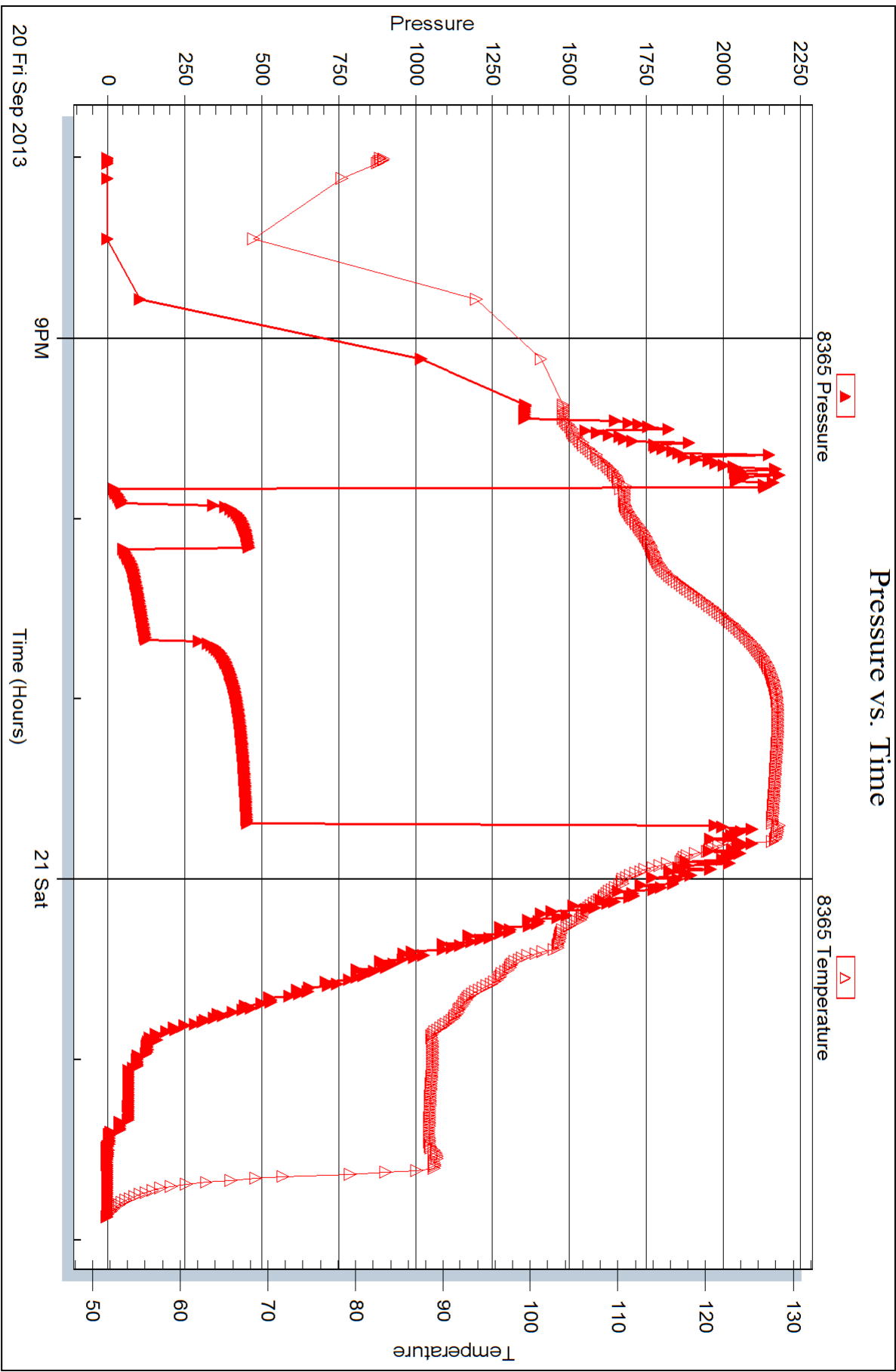
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .220 @ 45 Degrees F = 55000 PPM







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.21 @ 11:13:00

End Date: 2013.09.21 @ 18:57:50

Job Ticket #: 54945 DST #: 8

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

Printed: 2013.09.24 @ 10:06:14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54945

DST#: 8

ATTN: Vern Schrag

Test Start: 2013.09.21 @ 11:13:00

GENERAL INFORMATION:

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:10:40

Time Test Ended: 18:57:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4299.00 ft (KB) To 4336.00 ft (KB) (TVD)

Total Depth: 4336.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ Run Depth: 80.20 psig @ 4301.00 ft (KB)

Start Date: 2013.09.21

End Date:

2013.09.21

Start Time: 11:13:05

End Time:

18:57:50

Capacity: 8000.00 psig

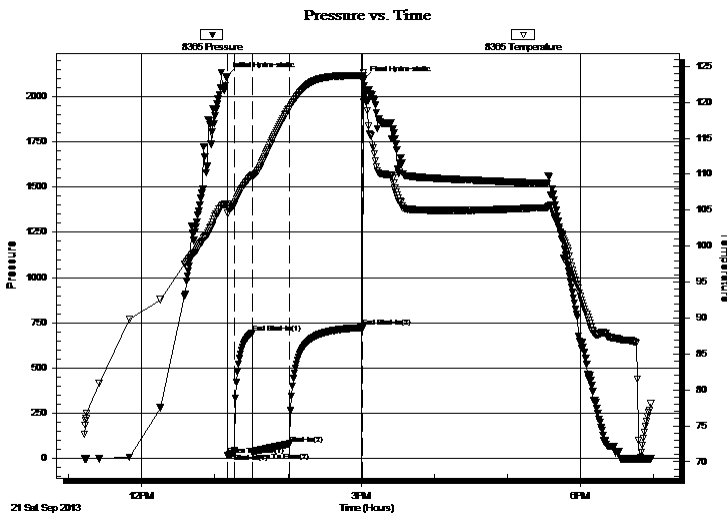
Last Calib.: 2013.09.21

Time On Btm: 2013.09.21 @ 13:09:10

Time Off Btm: 2013.09.21 @ 15:02:00

TEST COMMENT: 2 1/2" Blow .
No return.
5" Blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2108.55	105.84	Initial Hydro-static
2	17.51	104.55	Open To Flow (1)
7	29.23	105.81	Shut-In(1)
22	694.46	109.89	End Shut-In(1)
22	34.41	109.58	Open To Flow (2)
52	80.20	119.13	Shut-In(2)
113	723.97	123.66	End Shut-In(2)
113	2091.73	123.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
118.00	WM 40w 60m	0.58
40.00	WM 10w 90m	0.29

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54945

DST#: 8

ATTN: Vern Schrag

Test Start: 2013.09.21 @ 11:13:00

GENERAL INFORMATION:

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:10:40

Time Test Ended: 18:57:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4299.00 ft (KB) To 4336.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4336.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4301.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.21

End Date:

2013.09.21

Last Calib.:

2013.09.21

Start Time: 11:13:01

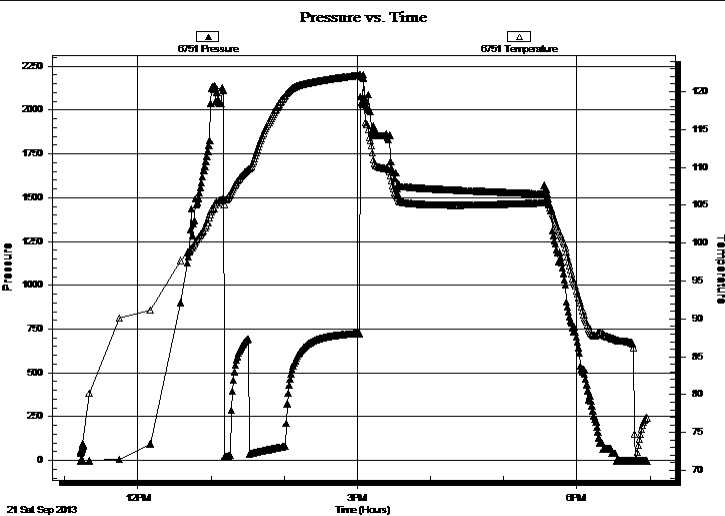
End Time:

18:57:40

Time On Btm:

Time Off Btm:

TEST COMMENT: 2 1/2" Blow .
No return.
5" Blow .
No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
118.00	WM 40w 60m	0.58
40.00	WM 10w 90m	0.29

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54945

DST#: 8

ATTN: Vern Schrag

Test Start: 2013.09.21 @ 11:13:00

Tool Information

Drill Pipe:	Length: 4136.00 ft	Diameter: 3.80 inches	Volume: 58.02 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 58.75 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.50 ft			String Weight: Initial	59000.00 lb
Depth to Top Packer:	4299.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	37.00 ft				
Tool Length:	64.50 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			4272.50	
Shut In Tool	5.00			4277.50	
Hydraulic tool	5.00			4282.50	
Jars	5.00			4287.50	
Safety Joint	2.50			4290.00	
Packer	5.00			4295.00	27.50 Bottom Of Top Packer
Packer	4.00			4299.00	
Stubb	1.00			4300.00	
Perforations	1.00			4301.00	
Recorder	0.00	8365	Inside	4301.00	
Recorder	0.00	6751	Outside	4301.00	
Perforations	0.00			4301.00	
Change Over Sub	0.50			4301.50	
Drill Pipe	31.00			4332.50	
Change Over Sub	0.50			4333.00	
Bullnose	3.00			4336.00	37.00 Bottom Packers & Anchor
Total Tool Length:	64.50				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54945

DST#: 8

ATTN: Vern Schrag

Test Start: 2013.09.21 @ 11:13:00

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:

38000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
118.00	WM 40w 60m	0.580
40.00	WM 10w 90m	0.288

Total Length: 158.00 ft Total Volume: 0.868 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

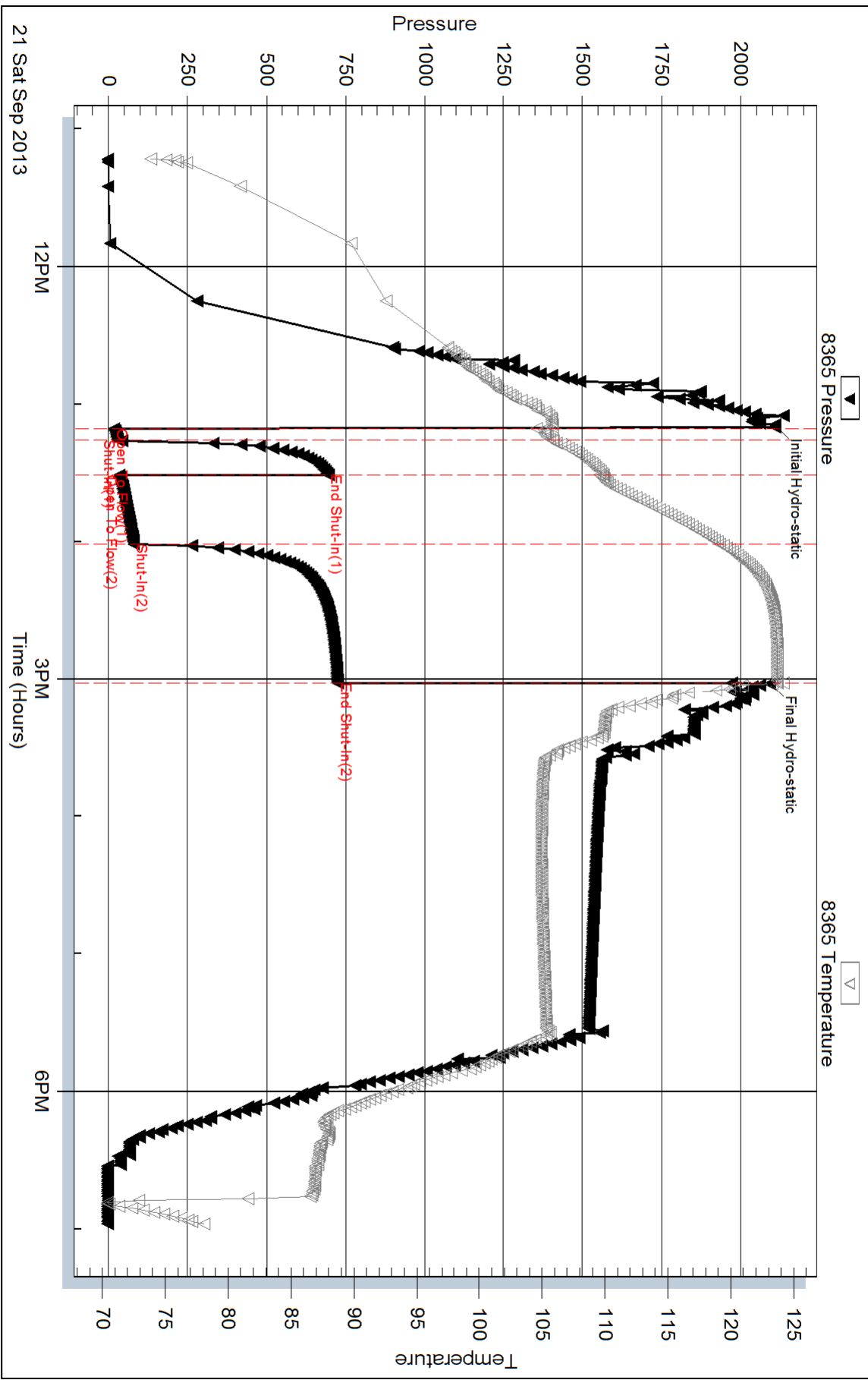
Serial #:

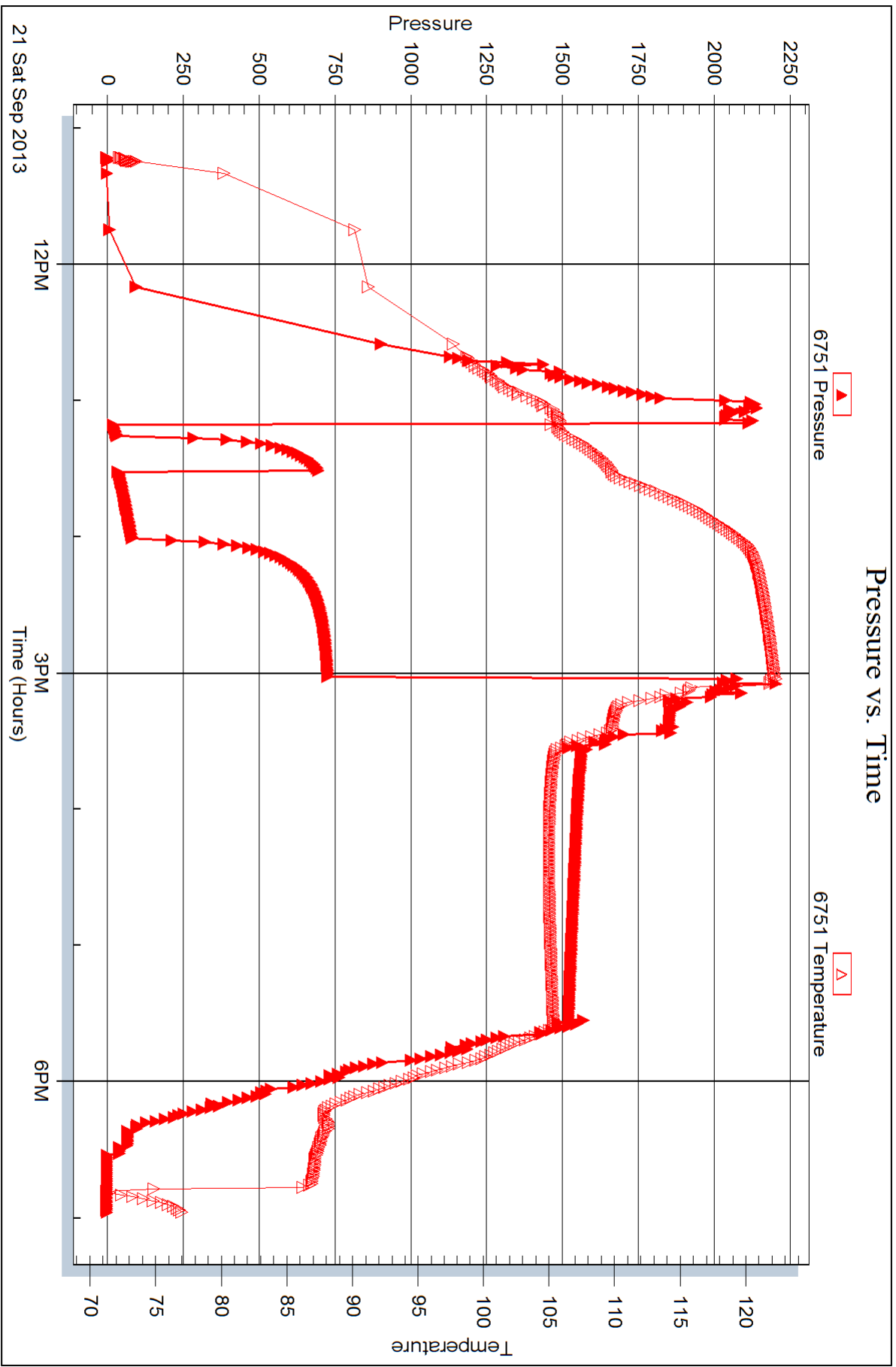
Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .185 @ 73 Degrees F = 38000 PPM

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.22 @ 03:16:00

End Date: 2013.09.22 @ 08:31:39

Job Ticket #: 54946 DST #: 9

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

Printed: 2013.09.24 @ 10:05:46



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54946

DST#: 9

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 03:16:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:11:40

Time Test Ended: 08:31:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4319.00 ft (KB) To 4360.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4360.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ Run Depth: 97.61 psig @ 4320.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.22

End Date:

2013.09.22

Last Calib.:

2013.09.22

Start Time: 03:16:05

End Time:

08:31:40

Time On Btm:

2013.09.22 @ 05:10:20

Time Off Btm:

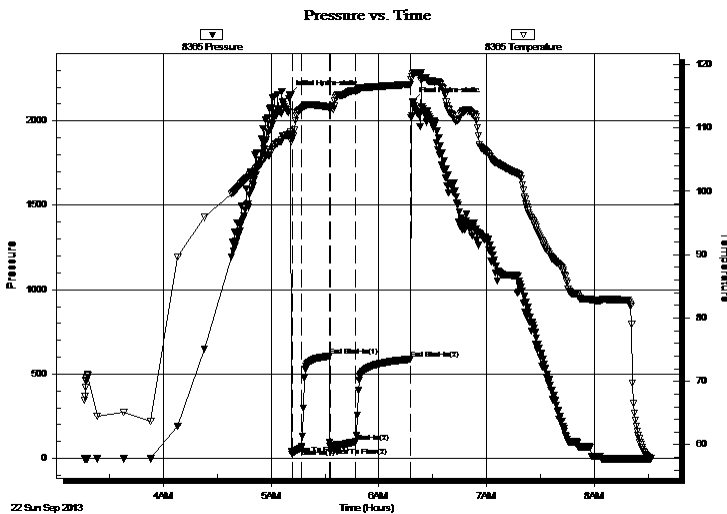
2013.09.22 @ 06:18:50

TEST COMMENT: 7" Blow.

Weak return.

B.O.B. @ 8 1/2 min.

3 1/2" Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2157.36	108.99	Initial Hydro-static
2	26.06	108.50	Open To Flow (1)
7	62.64	112.93	Shut-In(1)
22	606.06	113.34	End Shut-In(1)
23	68.28	113.25	Open To Flow (2)
37	97.61	115.86	Shut-In(2)
68	587.44	116.89	End Shut-In(2)
69	2116.78	118.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
118.00	GOCM 15g 20o 65m	0.58
60.00	GMCO 30g 35m 35o	0.57
30.00	GO 25g 75o	0.42

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54946

DST#: 9

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 03:16:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:11:40

Time Test Ended: 08:31:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4319.00 ft (KB) To 4360.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4360.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751

Outside

Press @ Run Depth: psig @ 4320.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.22

End Date:

2013.09.22

Last Calib.:

2013.09.22

Start Time: 03:16:01

End Time:

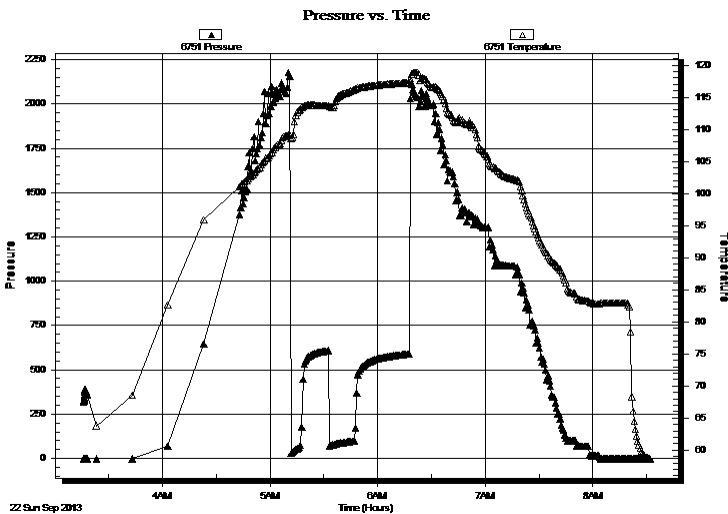
08:31:50

Time On Btm:

Time Off Btm:

TEST COMMENT: 7" Blow .
Weak return.
B.O.B. @ 8 1/2 min.
3 1/2" Return.

PRESSURE SUMMARY



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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
118.00	GOCM 15g 20o 65m	0.58
60.00	GMCO 30g 35m 35o	0.57
30.00	GO 25g 75o	0.42

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54946

DST#: 9

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 03:16:00

Tool Information

Drill Pipe:	Length: 4169.00 ft	Diameter: 3.80 inches	Volume: 58.48 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 59.21 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.50 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4319.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	68.50 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			4292.50	
Shut In Tool	5.00			4297.50	
Hydraulic tool	5.00			4302.50	
Jars	5.00			4307.50	
Safety Joint	2.50			4310.00	
Packer	5.00			4315.00	27.50 Bottom Of Top Packer
Packer	4.00			4319.00	
Stubb	1.00			4320.00	
Perforations	0.00			4320.00	
Recorder	0.00	8365	Inside	4320.00	
Recorder	0.00	6751	Outside	4320.00	
Perforations	4.00			4324.00	
Change Over Sub	1.00			4325.00	
Drill Pipe	31.00			4356.00	
Change Over Sub	1.00			4357.00	
Bullnose	3.00			4360.00	41.00 Bottom Packers & Anchor
Total Tool Length:	68.50				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54946

DST#: 9

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 03:16:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
118.00	GOCM 15g 20o 65m	0.580
60.00	GMCO 30g 35m 35o	0.568
30.00	GO 25g 75o	0.421

Total Length: 208.00 ft Total Volume: 1.569 bbl

Num Fluid Samples: 0

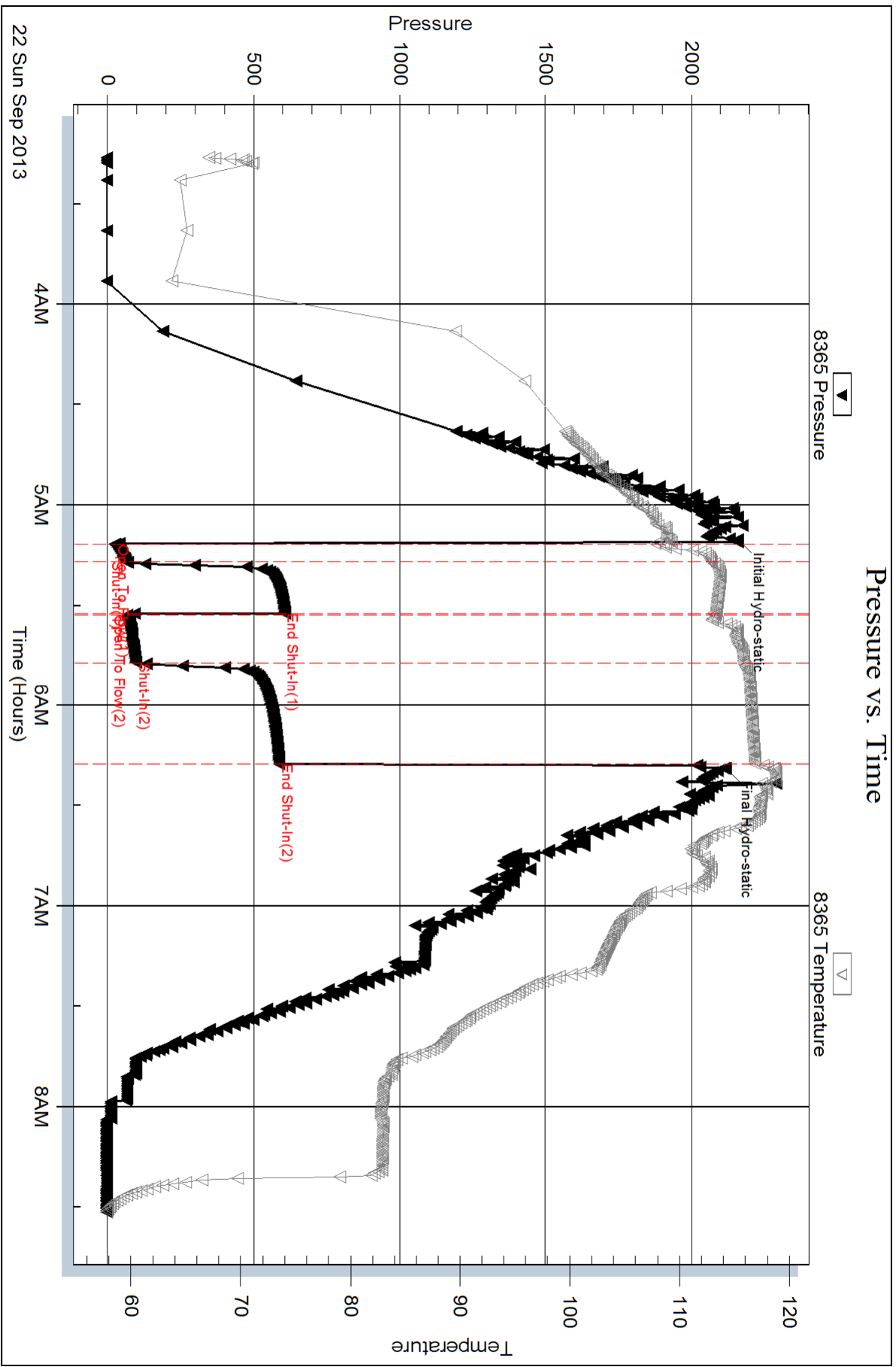
Num Gas Bombs: 0

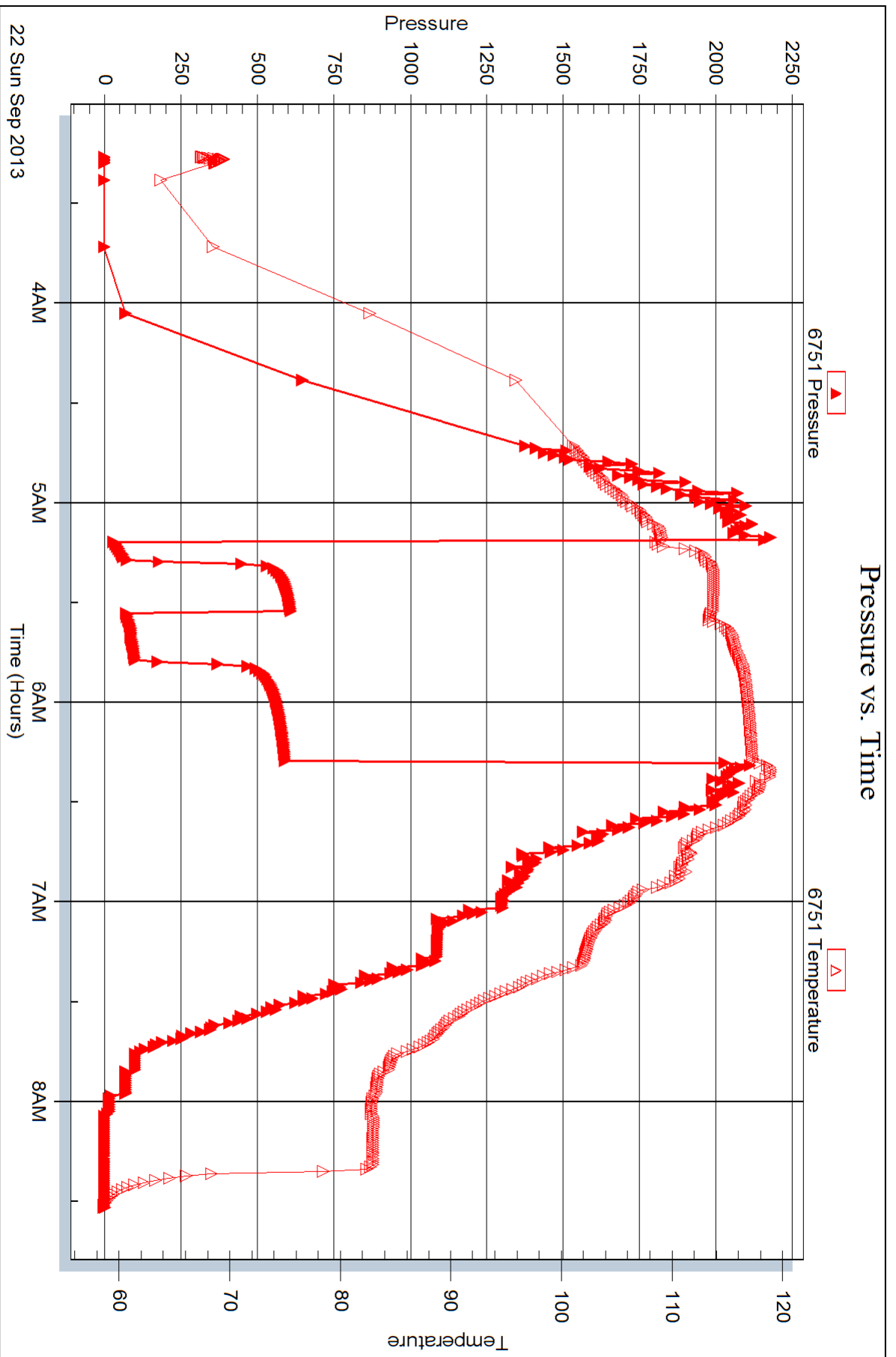
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 36 @ 60 Degrees F = 36.







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.22 @ 17:03:00

End Date: 2013.09.22 @ 22:08:50

Job Ticket #: 54947 DST #: 10

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

Printed: 2013.09.24 @ 10:05:16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54947

DST#: 10

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 17:03:00

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:01:40

Time Test Ended: 22:08:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4359.00 ft (KB) To 4383.00 ft (KB) (TVD)

Total Depth: 4383.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8365 Inside

Press @ Run Depth: 17.56 psig @ 4362.00 ft (KB)

Start Date: 2013.09.22

End Date: 2013.09.22

Start Time: 17:03:05

End Time: 22:08:50

Capacity: 8000.00 psig

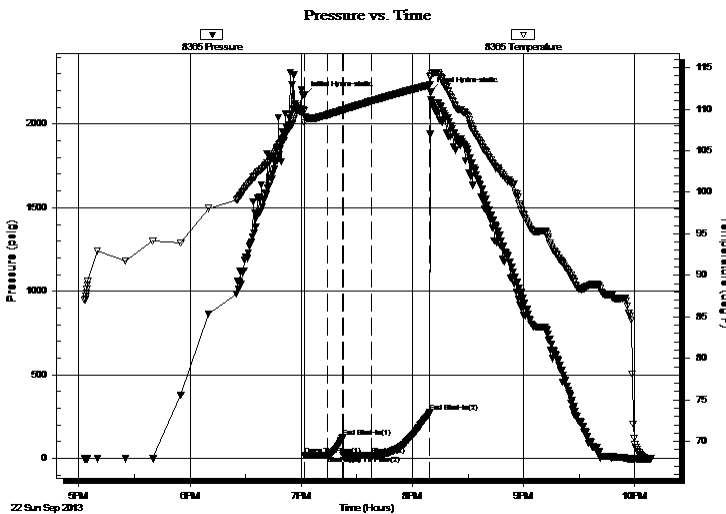
Last Calib.: 2013.09.22

Time On Btm: 2013.09.22 @ 19:01:30

Time Off Btm: 2013.09.22 @ 20:09:50

TEST COMMENT: Surface blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2172.58	109.87	Initial Hydro-static
1	16.95	108.36	Open To Flow (1)
13	18.24	109.33	Shut-In(1)
21	124.92	109.91	End Shut-In(1)
21	17.21	109.89	Open To Flow (2)
37	17.56	110.98	Shut-In(2)
68	273.38	112.93	End Shut-In(2)
69	2192.03	113.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	SOCM 2o 98m	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 54947

DST#: 10

Test Start: 2013.09.22 @ 17:03:00

GENERAL INFORMATION:

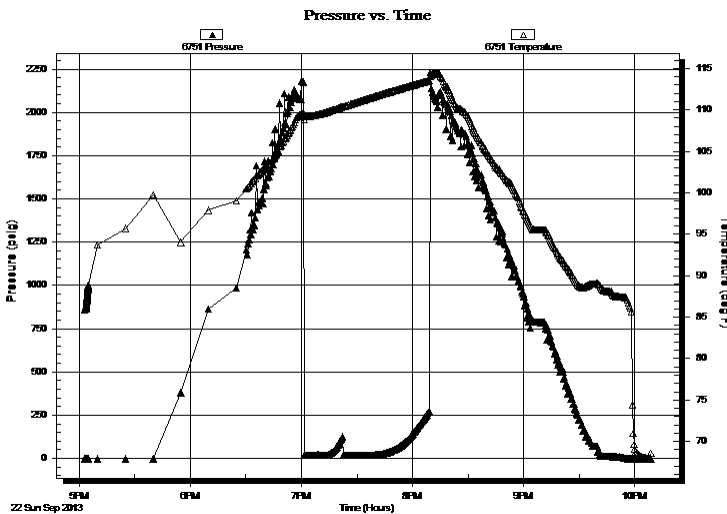
Formation: **Altamont**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 19:01:40
 Tester: Chuck Smith
 Time Test Ended: 22:08:50
 Unit No: 62
 Interval: **4359.00 ft (KB) To 4383.00 ft (KB) (TVD)**
 Reference Elevations: 2898.00 ft (KB)
 Total Depth: 4383.00 ft (KB) (TVD)
 2891.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @	4362.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2013.09.22	End Date:	2013.09.22
Start Time:	17:02:52	End Time:	22:08:41
		Time On Btm:	
		Time Off Btm:	

TEST COMMENT: Surface blow .
 No return.
 No blow .
 No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	SOCM 2o 98m	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54947

DST#: 10

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 17:03:00

Tool Information

Drill Pipe:	Length: 4199.00 ft	Diameter: 3.80 inches	Volume: 58.90 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 59.63 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.50 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4359.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	51.50 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

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

Change Over Sub	1.00			4332.50	
Shut In Tool	5.00			4337.50	
Hydraulic tool	5.00			4342.50	
Jars	5.00			4347.50	
Safety Joint	2.50			4350.00	
Packer	5.00			4355.00	27.50 Bottom Of Top Packer
Packer	4.00			4359.00	
Stubb	1.00			4360.00	
Perforations	2.00			4362.00	
Recorder	0.00	8365	Inside	4362.00	
Recorder	0.00	6751	Outside	4362.00	
Perforations	18.00			4380.00	
Bullnose	3.00			4383.00	24.00 Bottom Packers & Anchor

Total Tool Length: 51.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54947

DST#: 10

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 17:03:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	SOCM 2o 98m	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

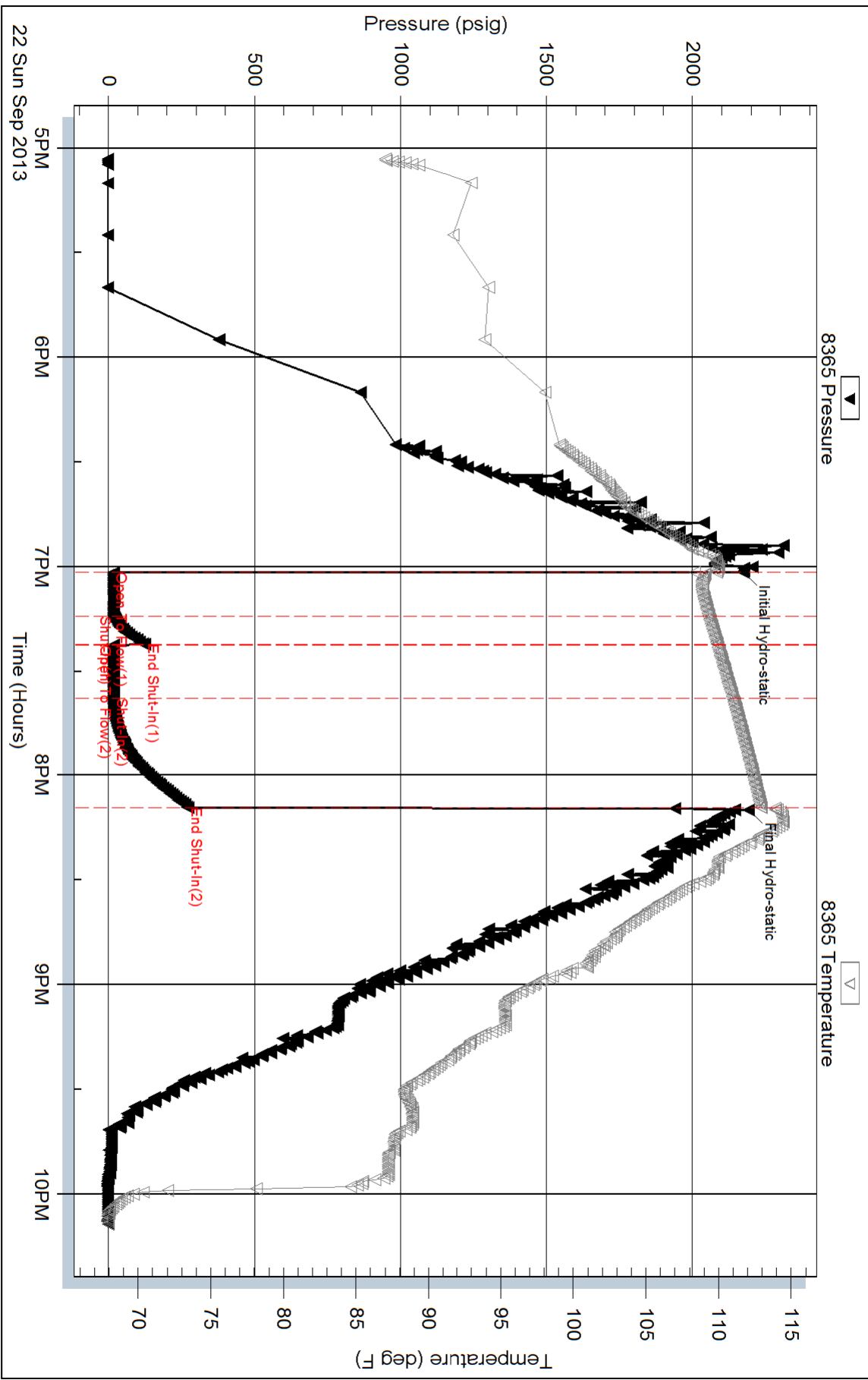
Serial #:

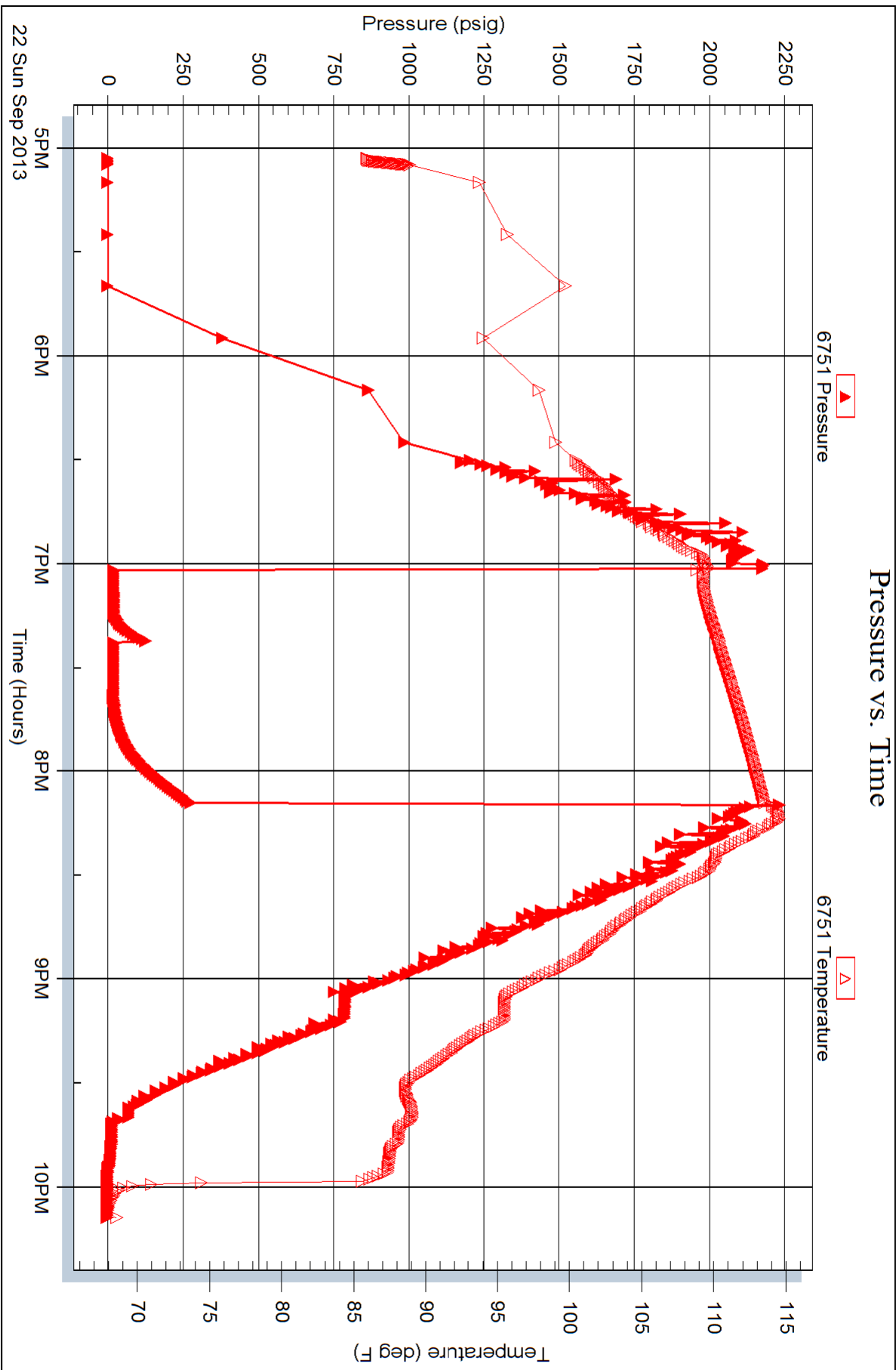
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52938

Well Name & No. Cleo #1-20 Test No. 1 Date 9-15-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 3961 - 3983 Zone Tested LKC 'B'
 Anchor Length 22 Drill Pipe Run 3794 Mud Wt. 8.7
 Top Packer Depth 3957 Drill Collars Run 148 Vis 54
 Bottom Packer Depth 3961 Wt. Pipe Run 0 WL 6.8
 Total Depth 3983 Chlorides 1900 ppm System LCM 2#
 Blow Description Surface blow
No return.
Weak surface blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>20</u>	Feet of <u>OCN</u>	%gas	<u>30</u> %oil	%water <u>70</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20 BHT 116 Gravity - API RW @ °F Chlorides - ppm
 (A) Initial Hydrostatic 1955 Test 1150 T-On Location 18:00
 (B) First Initial Flow 31 Jars 250 T-Started 21:49
 (C) First Final Flow 35 Safety Joint 75 T-Open 23:41
 (D) Initial Shut-In 991 Circ Sub NIC T-Pulled 00:50
 (E) Second Initial Flow 37 Hourly Standby _____ T-Out 2:31
 (F) Second Final Flow 41 Mileage 33RT 51.15 Comments _____
 (G) Final Shut-In 962 Sampler _____
 (H) Final Hydrostatic 1917 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Initial Open 5
 Initial Shut-In 15
 Final Flow 18
 Final Shut-In 30
 Sub Total 1526.15
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1526.15
 MP/DST Disc't _____

Approved By Jeron C. Selby Our Representative Chuck Smith

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. 52939

Well Name & No. Cleo #1-20 Test No. 2 Date 9-16-13¹⁷
 Company Larson Engineering Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

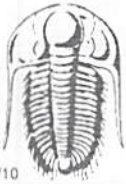
Interval Tested 4113-4135 Zone Tested LKC 'H'
 Anchor Length 22 Drill Pipe Run 3948 Mud Wt. 8.9
 Top Packer Depth 4109 Drill Collars Run 148 Vis 54
 Bottom Packer Depth 4113 Wt. Pipe Run 0 WL 8.0
 Total Depth 4135 Chlorides 2400 ppm System LCM 2"
 Blow Description 1/2" Blow.
No return.
3" Blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>60</u>	<u>10</u>	<u>90</u>		
<u>60</u>	<u>OCM</u>		<u>20</u>		<u>80</u>

Rec Total 100 BHT 117 Gravity 33 API RW @ _____ ° F Chlorides _____ ppm
 (A) Initial Hydrostatic 2082023 Test 1250 T-On Location 23:13
 (B) First Initial Flow 15 Jars 250 T-Started 23:15
 (C) First Final Flow 22 Safety Joint 75 T-Open 00:52
 (D) Initial Shut-In 691 Circ Sub N/C T-Pulled 2:43
 (E) Second Initial Flow 25 Hourly Standby _____ T-Out 4:27
 (F) Second Final Flow 46 Mileage 51.15 Comments _____
 (G) Final Shut-In 681 Sampler _____
 (H) Final Hydrostatic 2019 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Sub Total 1626.15
 Approved By Vernon C Schrag Our Representative Chuck Smith

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. 52940

Well Name & No. Cleo #1-20 Test No. 3 Date 9-18-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD# 3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4160 - 4185 Zone Tested LKC I'
 Anchor Length 25 Drill Pipe Run 4010 Mud Wt. 9.0
 Top Packer Depth 4156 Drill Collars Run 148 Vis 55
 Bottom Packer Depth 4160 Wt. Pipe Run 0 WL 7.6
 Total Depth 4185 Chlorides 2800 ppm System LCM 2#

Blow Description Weak surface blow
No return.
1/2" Blow.
Weak surface return, died @ 14 min.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>30</u>	Feet of <u>OCM</u>	%gas <u>8</u>	%oil	%water <u>92</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

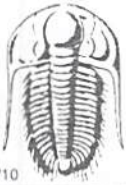
Rec Total 30 BHT 114 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2053 Test 1250 T-On Location 14:10
 (B) First Initial Flow 13 Jars 250 T-Started 14:10
 (C) First Final Flow 17 Safety Joint 75 T-Open 15:48
 (D) Initial Shut-In 846 Circ Sub NIC T-Pulled 17:39
 (E) Second Initial Flow 17 Hourly Standby — T-Out 19:15
 (F) Second Final Flow 28 Mileage 51.15 Comments —
 (G) Final Shut-In 837 Sampler —
 (H) Final Hydrostatic 2030 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 30 Day Standby — Total 1626.15
 Final Shut-In 60 Accessibility — MP/DST Disc't —
 Sub Total 1626.15

Approved By Jessal Selby Our Representative Chuck Smith

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. 52941

Well Name & No. Cleo #1-20 Test No. 4 Date 9-19-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4202 - 4218 Zone Tested LKC'J'
 Anchor Length 16 Drill Pipe Run 4042 Mud Wt. 9.0
 Top Packer Depth 4198 Drill Collars Run 148 Vis 52
 Bottom Packer Depth 4202 Wt. Pipe Run - WL 7.2
 Total Depth 4218 Chlorides 2800 ppm System LCM 2"
 Blow Description 1/4" Blow.
No return.
Surface blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>10</u>	Feet of <u>OCM</u>	%gas <u>20</u>	%oil	%water <u>80</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 114 Gravity - API RW @ °F Chlorides - ppm
 (A) Initial Hydrostatic 2101 Test 1250 T-On Location 5:15
 (B) First Initial Flow 14 Jars 250 T-Started 5:40
 (C) First Final Flow 18 Safety Joint 75 T-Open 7:49
 (D) Initial Shut-In 553 Circ Sub N/C T-Pulled 8:55
 (E) Second Initial Flow 18 Hourly Standby T-Out 10:28
 (F) Second Final Flow 23 Mileage 51.15 Comments _____
 (G) Final Shut-In 549 Sampler _____
 (H) Final Hydrostatic 2057 Straddle _____
 Initial Open 5 Shale Packer _____
 Initial Shut-In 15 Shale Packer _____
 Final Flow 15 Extra Packer _____
 Final Shut-In 30 Extra Recorder _____
 Sub Total 1626.15 Day Standby _____
 Total 1626.15 Accessibility _____
 MP/DST Disc't _____

Approved By Jerson C. Achary Our Representative Chuck Smith

Trilobite Testing Inc. shall not be liable for damaged or destroyed 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. 52942

Well Name & No. Cleo #1-20 Test No. 5 Date 9-19-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30W Co. Lane State KS

Interval Tested 4216-4232 Zone Tested LKC 'K'
 Anchor Length 16 Drill Pipe Run 4044 Mud Wt. 9.1
 Top Packer Depth 4212 Drill Collars Run 148 Vis 55
 Bottom Packer Depth 4216 Wt. Pipe Run - WL 8.0
 Total Depth 4232 Chlorides 2900 ppm System LCM 2*

Blow Description 6" Blow
No return.
B.O.B. @ 19 min.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>0</u>	<u>100</u>			
<u>70</u>	<u>OSWM</u>		<u>15</u>	<u>85</u>	
<u>240</u>	<u>WM</u>		<u>35</u>	<u>65</u>	

Rec Total 312 BHT 127 Gravity API RW, 221 @ 55° F Chlorides 43,000 ppm

(A) Initial Hydrostatic 2126 Test 1250 T-On Location 17:15
 (B) First Initial Flow 22 Jars 250 T-Started 17:30
 (C) First Final Flow 72 Safety Joint 75 T-Open 19:29
 (D) Initial Shut-In 546 Circ Sub N/C T-Pulled 21:22
 (E) Second Initial Flow 78 Hourly Standby _____ T-Out 23:15
 (F) Second Final Flow 156 Mileage 51.15 Comments _____
 (G) Final Shut-In 495 Sampler _____
 (H) Final Hydrostatic 2095 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 30 Day Standby _____ Total 1626.15
 Final Shut-In 60 Accessibility _____ MP/DST Disc't _____

Sub Total 1626.15
 Approved By Vern Schrag Our Representative Chuck Smith

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. 52943

Well Name & No. Cleo #1-20 Test No. 6 Date 9-20-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4256 - 4265 Zone Tested Middle Creek
 Anchor Length 9 Drill Pipe Run 4105 Mud Wt. 8.9
 Top Packer Depth 4252 Drill Collars Run 148 Vis 60
 Bottom Packer Depth 4256 Wt. Pipe Run - WL 8.0
 Total Depth 4265 Chlorides 2900 ppm System LCM 2^F
 Blow Description 1/2" Blow.
No return.
3/4" Blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>30</u>	Feet of <u>OCM</u>	%gas	<u>7</u> %oil	%water	<u>93</u> %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 116 Gravity - API RW @ ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2103</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>6:30</u>
(B) First Initial Flow <u>14</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:49</u>
(C) First Final Flow <u>17</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:38</u>
(D) Initial Shut-In <u>82</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>9:48</u>
(E) Second Initial Flow <u>18</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:22</u>
(F) Second Final Flow <u>25</u>	<input checked="" type="checkbox"/> Mileage <u>51.15</u>	Comments
(G) Final Shut-In <u>79</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2064</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>17</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1626.15</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't

Sub Total 1626.15
 Approved By Damon C Schrag Our Representative Chuck Smith

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. 52944

Well Name & No. Cleo #1-20 Test No. 7 Date 9-20-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4274-4287 Zone Tested LKC 2'
 Anchor Length 13 Drill Pipe Run 4107 Mud Wt. 9.1
 Top Packer Depth 4270 Drill Collars Run 148 Vis 56
 Bottom Packer Depth 4274 Wt. Pipe Run - WL 7.6
 Total Depth 4287 Chlorides 3200 ppm System LCM 2
 Blow Description 3" Blow.
Very weak return.
B.O.B. @ 28 min.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
#1	0	100			
64	OS WM		30	70	
180	MW		80	20	

Rec Total 245 BHT 128 Gravity - API RW .220 @ 45° F Chlorides 55000 ppm
 (A) Initial Hydrostatic 2167 Test 1250 T-On Location 20:00
 (B) First Initial Flow 21 Jars 250 T-Started 20:00
 (C) First Final Flow 49 Safety Joint 75 T-Open 21:50
 (D) Initial Shut-In 460 Circ Sub NIC T-Pulled 23:42
 (E) Second Initial Flow 53 Hourly Standby _____ T-Out 1:52
 (F) Second Final Flow 125 Mileage 51.15 Comments _____
 (G) Final Shut-In 454 Sampler _____
 (H) Final Hydrostatic 2104 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1626.15

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Approved By Vern Schrag Our Representative Chuck Smith

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. 52945

Well Name & No. Cleo #1-20 Test No. 8 Date 9-21-13
 Company Larson Engineering Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

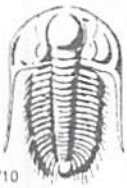
Interval Tested 4299 - 4336 Zone Tested Pleasanton
 Anchor Length 37 Drill Pipe Run 4136 Mud Wt. 9.1
 Top Packer Depth 4295 Drill Collars Run 148 Vis 54
 Bottom Packer Depth 4299 Wt. Pipe Run - WL 7.6
 Total Depth 4336 Chlorides 3000 ppm System LCM 2⁺
 Blow Description 2 1/2" Blow.
No return.
5" Blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>40</u>	Feet of <u>WM</u>	%gas	%oil	<u>10</u> %water	<u>90</u> %mud
Rec <u>118</u>	Feet of <u>WM</u>	%gas	%oil	<u>40</u> %water	<u>60</u> %mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 158 BHT 124 Gravity - API RW .185 @ 73 ° F Chlorides 38,000 ppm
 (A) Initial Hydrostatic 2109 Test 1250 T-On Location 11:00
 (B) First Initial Flow 18 Jars 250 T-Started 11:13
 (C) First Final Flow 29 Safety Joint 75 T-Open 13:11
 (D) Initial Shut-In 694 Circ Sub NIC T-Pulled 15:02
 (E) Second Initial Flow 34 Hourly Standby _____ T-Out 18:58
 (F) Second Final Flow 80 Mileage 51.15 Comments _____
 (G) Final Shut-In 724 Sampler _____
 (H) Final Hydrostatic 2092 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1626.15

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Sub Total 1626.15
 Approved By Vern Schrag Our Representative Chuck Smith
 Sub Total 0
 Total 1626.15
 MP/DST Disc't _____

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. 52946

Well Name & No. Cleo #1-20 Test No. 9 Date 9-22-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4319-4360 Zone Tested Marmaton
 Anchor Length 41 Drill Pipe Run 4169 Mud Wt. 9.0
 Top Packer Depth 4315 Drill Collars Run 178 Vis 60
 Bottom Packer Depth 4319 Wt. Pipe Run - WL 7.6
 Total Depth 4360 Chlorides 3000 ppm System LCM 2#

Blow Description 7" Blow.
Weak return.
B.O.B. @ 8 1/2 min.
3 1/2" Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>GO</u>	<u>25</u>	<u>75</u>		
<u>60</u>	<u>GMCO</u>	<u>30</u>	<u>35</u>		<u>35</u>
<u>118</u>	<u>GOCM</u>	<u>15</u>	<u>20</u>		<u>65</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 208 BHT 117 Gravity 36 API RW @ ° F Chlorides - ppm

(A) Initial Hydrostatic 2157 Test 1250 T-On Location 3:15
 (B) First Initial Flow 26 Jars 250 T-Started 3:16
 (C) First Final Flow 63 Safety Joint 75 T-Open 5:12
 (D) Initial Shut-In 606 Circ Sub _____ T-Pulled 6:18
 (E) Second Initial Flow 68 Hourly Standby _____ T-Out 8:32
 (F) Second Final Flow 98 Mileage 51.15 Comments _____
 (G) Final Shut-In 587 Sampler _____
 (H) Final Hydrostatic 2117 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1626.15

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Sub Total 1626.15
 Total 1626.15
 MP/DST Disc't _____

Approved By Vern C Schrag Our Representative Chuck Smith

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. 52947

Well Name & No. Cleo #1-20 Test No. 10 Date 9-22-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4359-4383 Zone Tested Altament
 Anchor Length 24 Drill Pipe Run _____ Mud Wt. 9.1
 Top Packer Depth 4355 Drill Collars Run 148 Vis 55
 Bottom Packer Depth 4359 Wt. Pipe Run - WL 7.2
 Total Depth 4383 Chlorides 3900 ppm System LCM 1"

Blow Description Surface blow.
No return.
No blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>1</u>	Feet of <u>500M</u>		<u>2</u>	<u>98</u>	
Rec _____	Feet of _____				
Rec _____	Feet of _____				
Rec _____	Feet of _____				

Rec Total 1 BHT 113 Gravity - API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2173</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>16:45</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>17:03</u>
(C) First Final Flow <u>18</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>19:02</u>
(D) Initial Shut-In <u>125</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>20:09</u>
(E) Second Initial Flow <u>17</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>22:09</u>
(F) Second Final Flow <u>18</u>	<input checked="" type="checkbox"/> Mileage <u>51.15</u>	Comments _____
(G) Final Shut-In <u>273</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2192</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>1626.12</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1626.15</u>	

Approved By [Signature] Our Representative Chuck Smith
 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.