

DRILL STEM TEST REPORT

Prepared For: **Larson Operating Co.**

562 W Hiway 4
Olmits, KS 67564

ATTN: Tim Hedrick

15-16-7-Ellsworth

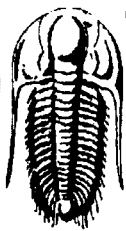
Johnson #1-15

Start Date: 2004.09.11 @ 07:00:09

End Date: 2004.09.11 @ 16:36:09

Job Ticket #: 20353 DST #: 1

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Operating Co.

562 W Hwy 4
Olmitz, KS 67564

ATTN: Tim Hedrick

Johnson #1-15

15-16-7-Ellsworth

Job Ticket: 20353

DST#: 1

Test Start: 2004.09.11 @ 07:00:09

GENERAL INFORMATION:

Formation: **Grand Haven**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 09:09:09

Time Test Ended: 16:36:09

Test Type: **Conventional Bottom Hole**

Tester: **Jason McLemore**

Unit No: **24**

Interval: **1770.00 ft (KB) To 1800.00 ft (KB) (TVD)**

Total Depth: **1800.00 ft (KB) (TVD)**

Hole Diameter: **7.80 inches** Hole Condition: **Good**

Reference Elevations: **1577.00 ft (KB)**

1567.00 ft (CF)

KB to GR/CF: **10.00 ft**

Serial #: 6753

Inside

Press@RunDepth: **47.15 psig @ 1772.00 ft (KB)**

Start Date: **2004.09.11**

End Date:

2004.09.11

Capacity: **7000.00 psig**

Last Calib.: **1899.12.30**

Start Time: **07:00:19**

End Time:

16:36:08

Time On Btm: **2004.09.11 @ 09:08:09**

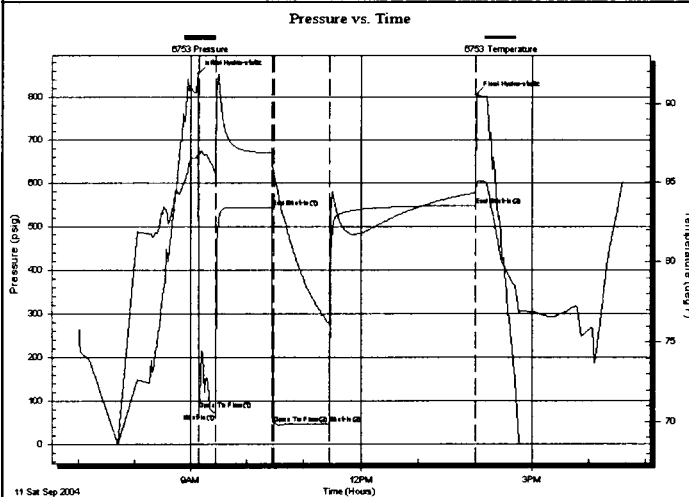
Time Off Btm: **2004.09.11 @ 14:00:39**

TEST COMMENT: **FFP-Strong Blow ,BOB in 45 Sec.Gas to Surface in 3 Min.,Guaging Gas**

ISI-Dead

FFP-Guaging Gas

FFP-Dead



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	854.00	86.76	Initial Hydro-static
1	79.23	86.70	Open To Flow (1)
19	70.25	85.52	Shut-In(1)
79	543.24	86.85	End Shut-In(1)
81	45.60	85.37	Open To Flow (2)
139	47.15	76.22	Shut-In(2)
292	547.50	84.34	End Shut-In(2)
293	805.85	84.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Mud	0.17

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	17.00	49.81
Last Gas Rate	0.50	18.75	223.62
Max. Gas Rate	0.50	18.75	223.62



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Operating Co.

Johnson #1-15

562 W Hwy 4
Olmitz, KS 67564

15-16-7-Elsworth

Job Ticket: 20353

DST#: 1

ATTN: Tim Hedrick

Test Start: 2004.09.11 @ 07:00:09

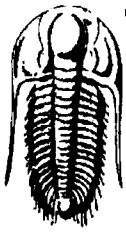
Tool Information

Drill Pipe:	Length:	1441.00 ft	Diameter:	2.80 inches	Volume:	10.97 bbl	Tool Weight:	2400.00 lb	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb	
Drill Collar:	Length:	313.00 ft	Diameter:	2.25 inches	Volume:	1.54 bbl	Weight to Pull Loose:	38000.00 lb	
						Total Volume:	12.51 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft							String Weight: Initial	35000.00 lb
Depth to Top Packer:	1770.00 ft							Final	35000.00 lb
Depth to Bottom Packer:	ft								
Interval between Packers:	30.00 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			1750.00	
Shut In Tool	5.00			1755.00	
Hydraulic tool	5.00			1760.00	
Packer	5.00			1765.00	21.00 Bottom Of Top Packer
Packer	5.00			1770.00	
Stubb	1.00			1771.00	
Perforations	1.00			1772.00	
Recorder	0.00	6753	Inside	1772.00	
Perforations	25.00			1797.00	
Recorder	0.00	13252	Outside	1797.00	
Bullnose	3.00			1800.00	30.00 Bottom Packers & Anchor

Total Tool Length: 51.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Operating Co.

Johnson #1-15

562 W Hwy 4
Olmitz, KS 67564

15-16-7-Elsworth

Job Ticket: 20353

DST#: 1

ATTN: Tim Hedrick

Test Start: 2004.09.11 @ 07:00:09

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: 43.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
35.00	Mud	0.172

Total Length: 35.00 ft

Total Volume: 0.172 bbl

Num Fluid Samples: 0

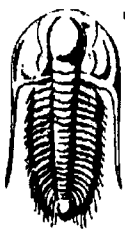
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GAS RATES

Larson Operating Co.

Johnson #1-15

562 W Highway 4
Olmitz, KS 67564

15-16-7-Elsworth

Job Ticket: 20353

DST#: 1

ATTN: Tim Hedrick

Test Start: 2004.09.11 @ 07:00:09

Gas Rates Information

Temperature: 59 deg C

Relative Density: 0.65

Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
1	5	0.25	17.00	49.81
1	10	0.50	8.75	156.16
1	15	0.50	11.00	171.34
2	5	0.50	15.00	198.32
2	10	0.50	16.00	205.07
2	15	0.50	17.00	211.82
2	20	0.50	17.00	211.82
2	25	0.50	17.50	215.19
2	30	0.50	17.50	215.19
2	35	0.50	17.75	216.87
2	40	0.50	18.00	218.56
2	45	0.50	18.25	220.25
2	50	0.50	18.50	221.93
2	55	0.50	18.50	221.93
2	30	0.50	18.75	223.62

Serial #: 6753

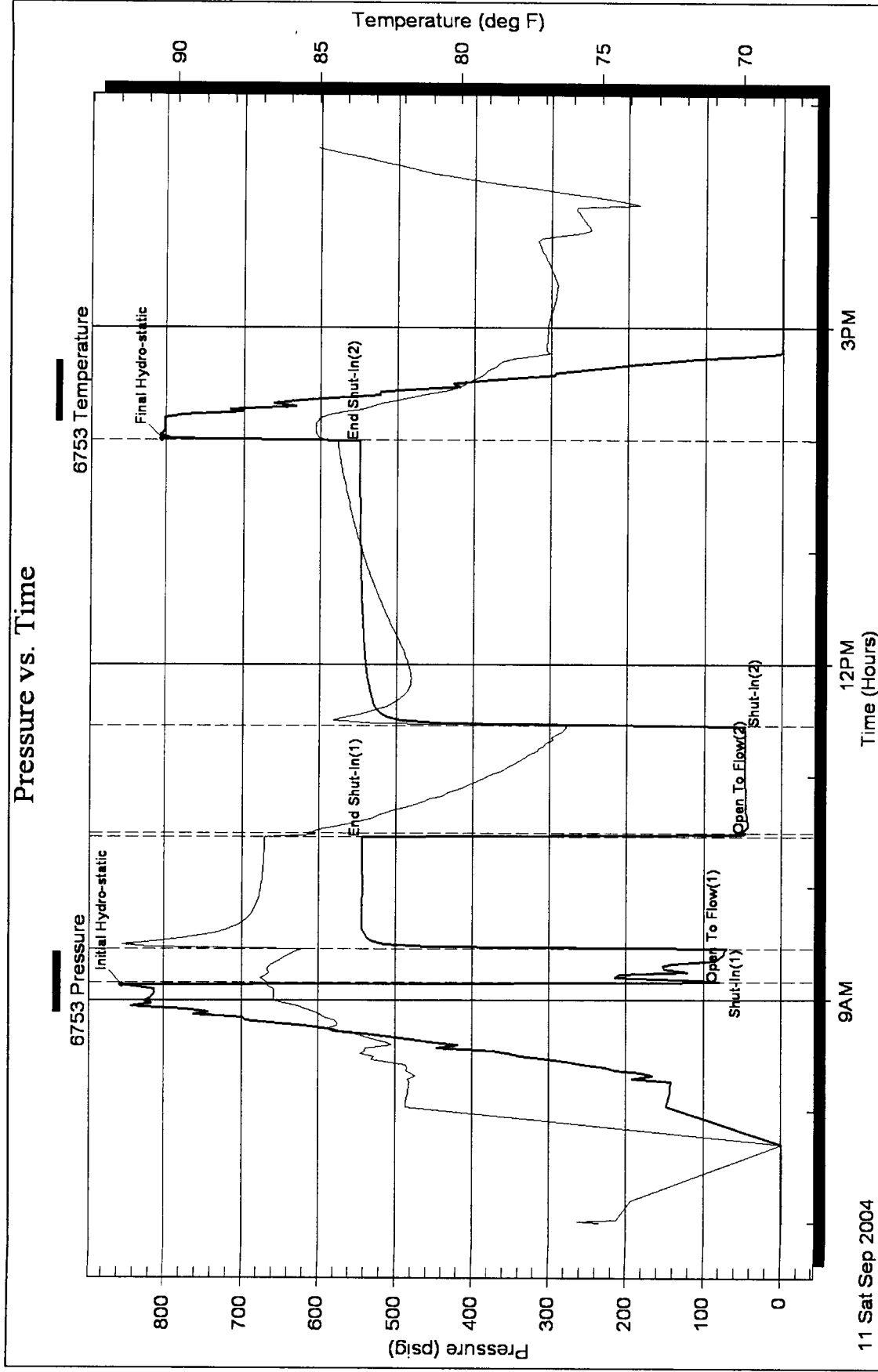
Inside

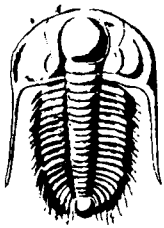
Larson Operating Co.

15-16-7-Elsworth

DST Test Number: 1

Pressure vs. Time





**TRILOBITE
TESTING INC.**

P.O. Box 362 • Hays, Kansas 67601

No 20353

Test Ticket

Well Name & No. Johnson # 1-15 Test No. 1 Date 9-11-04
Company Larson Operating Company Zone Tested Grand Haven
Address 562 W. Highway 4, Olmitz, KS 67564 Elevation 1577 KB 1567 GL
Co. Rep / Geo. Tim Hebrick Cont. Summit Est. Ft. of Pay _____ Por. _____ %
Location: Sec. 15 Twp. 16 Rge. 7 Co. Ellsworth State Ks
No. of Copies Reg Distribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 1770 - 1800 Initial Str Wt./Lbs. 35,000 Unseated Str Wt./Lbs. 35,000
Anchor Length 30' Wt. Set Lbs. 25,000 Wt. Pulled Loose/Lbs. 38,000
Packer Depth 1765 Tool Weight 2,400
Bottom Packer Depth 1770 Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓
Total Depth 1800 Wt. Pipe Run 0 Drill Collar Run 313
Ld Wt. 8.7 LCM 0 Vis. 43 WL 8.8 Drill Pipe Size 3 1/2 Ft. Run 1441

Flow Description IFP - Strong, BOB in 45 sec. Gas to Surface in 3 min, Gurgling Gas
ISI - Dead

FFP - Gurgling Gas
FSI - Dead Sampler - 500#, 85 cubic feet

Recovery - Total Feet	GIP	Ft. in DC	Ft. in DP	
35	Mud			
Feet of	%gas	%oil	%water	%mud
Feet of	%gas	%oil	%water	%mud
Feet of	%gas	%oil	%water	%mud
Feet of	%gas	%oil	%water	%mud
Feet of	%gas	%oil	%water	%mud
HT <u>84</u>	°F Gravity	°API D @	°F Corrected Gravity	°API
N	@	°F Chlorides	ppm Recovery	Chlorides <u>4700</u> ppm System

AK-1	Alpine	Recorder No.	Test
Initial Hydrostatic Mud	<u>854</u> PSI	<u>6753</u>	✓
First Initial Flow Pressure	<u>79</u> PSI	(depth) <u>1772</u>	Elec. Rec. ✓
First Final Flow Pressure	<u>70</u> PSI	Recorder No. <u>13252</u>	Jars
Initial Shut-In Pressure	<u>543</u> PSI	(depth) <u>1797</u>	Safety Jt.
Second Initial Flow Pressure	<u>46</u> PSI	Recorder No.	Circ Sub
Second Final Flow Pressure	<u>47</u> PSI	(depth)	Sampler ✓
Final Shut-In Pressure	<u>547</u> PSI	Initial Opening <u>15</u>	Straddle
Final Hydrostatic Mud	<u>806</u> PSI	Initial Shut-In <u>60</u>	Ext. Packer

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Approved By _____
Your Representative Jan McJannet Thank You
T-Started 7:00
T-Open 9:21
T-Pulled 13:56
T-Out 16:20
Test 83 1 way
Sub Total: 1241.10
Std. By 2hr 60
Other _____
Total: \$1301.70



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601 • (785) 625-4778

GAS VOLUME REPORT

Carson Operating Co.
OPERATOR

Johnson # 1-15
WELL NAME AND NO.

1
DST NO.

In.	Ins. of Water PSIG	Orifice Size	CF/D	Min.	Ins. of Water PSIG	Orifice Size	CF/D
1	17	1/4	49,813				
0	8.75	1/2	156,163				
5	11	1/2	171,341				
5	15	1/2	198,323				
0	16	1/2	205,069				
5	17	1/2	211,815				
0	17	1/2	211,815				
5	17.5	1/2	215,188				
0	17.5	1/2	215,188				
5	17.75	1/2	216,874				
0	18.0	1/2	218,560				
5	18.25	1/2	220,247				
0	18.5	1/2	221,933				
5	18.5	1/2	221,933				
0	18.75	1/2	223,620				

Remarks: