

DRILL STEM TEST REPORT

Prepared For: **Larson Operating Co**

562 West Highway 4
Olmitz Ks 67564

ATTN: Tom Larson

18-16-7-Ellsworth-Ks

1-18 Schroeder Trust

Start Date: 2004.01.09 @ 11:35:17

End Date: 2004.01.09 @ 18:21:32

Job Ticket #: 18424 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Larson Operating Co

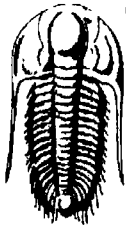
1-18 Schroeder Trust

18-16-7-Ellsworth-Ks

DST # 1

Grand Haven Sd

2004.01.09



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Operating Co
562 West Highway 4
Olmitz Ks 67564
ATTN: Tom Larson

1-18 Schroeder Trust
18-16-7-Ellsworth-Ks
Job Ticket: 18424 **DST#: 1**
Test Start: 2004.01.09 @ 11:35:17

GENERAL INFORMATION:

Formation: **Grand Haven Sd**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:04:47
Time Test Ended: 18:21:32
Test Type: Conventional Bottom Hole
Tester: Dan Bangle
Unit No: 21
Interval: **1769.00 ft (KB) To 1796.00 ft (KB) (TVD)**
Reference Elevations: 1576.00 ft (KB)
Total Depth: 1796.00 ft (KB) (TVD) 1568.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 8.00 ft

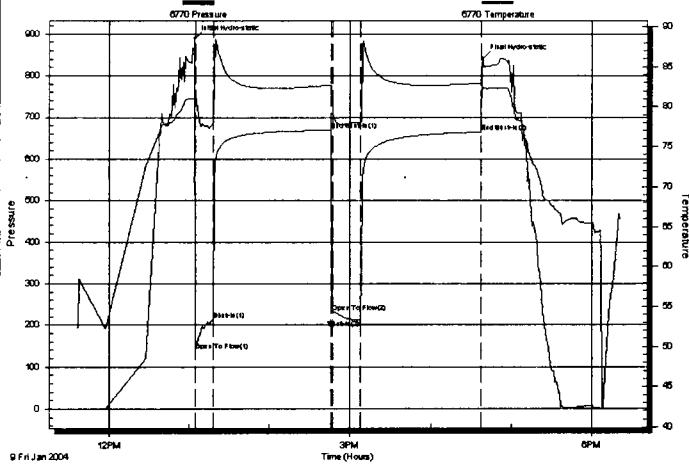
Serial #: 6770

Inside

Press@RunDepth: 212.21 psig @ 1770.00 ft (KB) Capacity: 7000.00 psig
Start Date: 2004.01.09 End Date: 2004.01.09 Last Calib.: 2004.01.09
Start Time: 11:35:32 End Time: 18:21:32 Time On Btm: 2004.01.09 @ 13:04:17
Time Off Btm: 2004.01.09 @ 16:38:47

TEST COMMENT: IF-Strong BOB in 20 sec-GTS in 2 min-Gauged-Sample taken
FF-Strong BOB as soon as tool opened-Gauged-Sample taken

Pressure vs. Time



PRESSURE SUMMARY

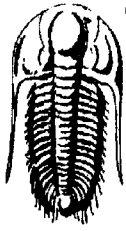
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	888.14	81.05	Initial Hydro-static
1	139.02	81.19	Open To Flow (1)
14	213.37	77.98	Shut-In(1)
102	668.62	82.73	End Shut-In(1)
103	230.69	79.14	Open To Flow (2)
124	212.21	78.03	Shut-In(2)
214	663.75	82.97	End Shut-In(2)
215	842.49	82.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	DM	153.89
0.00	GTS	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	50.00	1005.92
Last Gas Rate	0.75	70.00	1318.32
Max. Gas Rate	0.75	70.00	1318.32



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Operating Co
562 West Highway 4
Olmitz Ks 67564
ATTN: Tom Larson

1-18 Schroeder Trust
18-16-7-Ellsworth-Ks
Job Ticket: 18424 **DST#: 1**
Test Start: 2004.01.09 @ 11:35:17

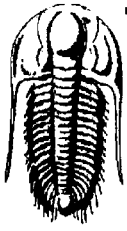
Tool Information

Drill Pipe:	Length: 1595.00 ft	Diameter: 1596.00 inches	Volume: 3946713. bbl	Tool Weight:	1900.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 178.00 ft	Diameter: 178.00 inches	Volume: 5478.59 bbl	Weight to Pull Loose:	31000.00 lb
			<u>Total Volume: 3952191. bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	30000.00 lb
Depth to Top Packer:	1769.00 ft			Final	30000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	27.00 ft				
Tool Length:	50.00 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			1747.00	
Shut In Tool	5.00			1752.00	
Sampler	2.00			1754.00	
Hydraulic tool	5.00			1759.00	
Packer	5.00			1764.00	23.00 Bottom Of Top Packer
Packer	5.00			1769.00	
Stubb	1.00			1770.00	
Recorder	0.00	6770	Inside	1770.00	
Perforations	23.00			1793.00	
Recorder	0.00	13254	Outside	1793.00	
Bullnose	3.00			1796.00	27.00 Bottom Packers & Anchor

Total Tool Length: 50.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Operating Co

1-18 Schroeder Trust

562 West Highway 4
Olmitz Ks 67564

18-16-7-Ellsworth-Ks

Job Ticket: 18424

DST#: 1

ATTN: Tom Larson

Test Start: 2004.01.09 @ 11:35:17

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: 36.00 sec/qt

Cushion Volume:

bbl

Water Loss: 10.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7100.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	DM	153.893
0.00	GTS	0.000

Total Length: 5.00 ft Total Volume: 153.893 bbl

Num Fluid Samples: 0

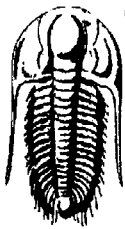
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GAS RATES

Larson Operating Co

1-18 Schroeder Trust

562 West Highway 4
Olmitz Ks 67564

18-16-7-Ellsworth-Ks

Job Ticket: 18424

DST#: 1

ATTN: Tom Larson

Test Start: 2004.01.09 @ 11:35:17

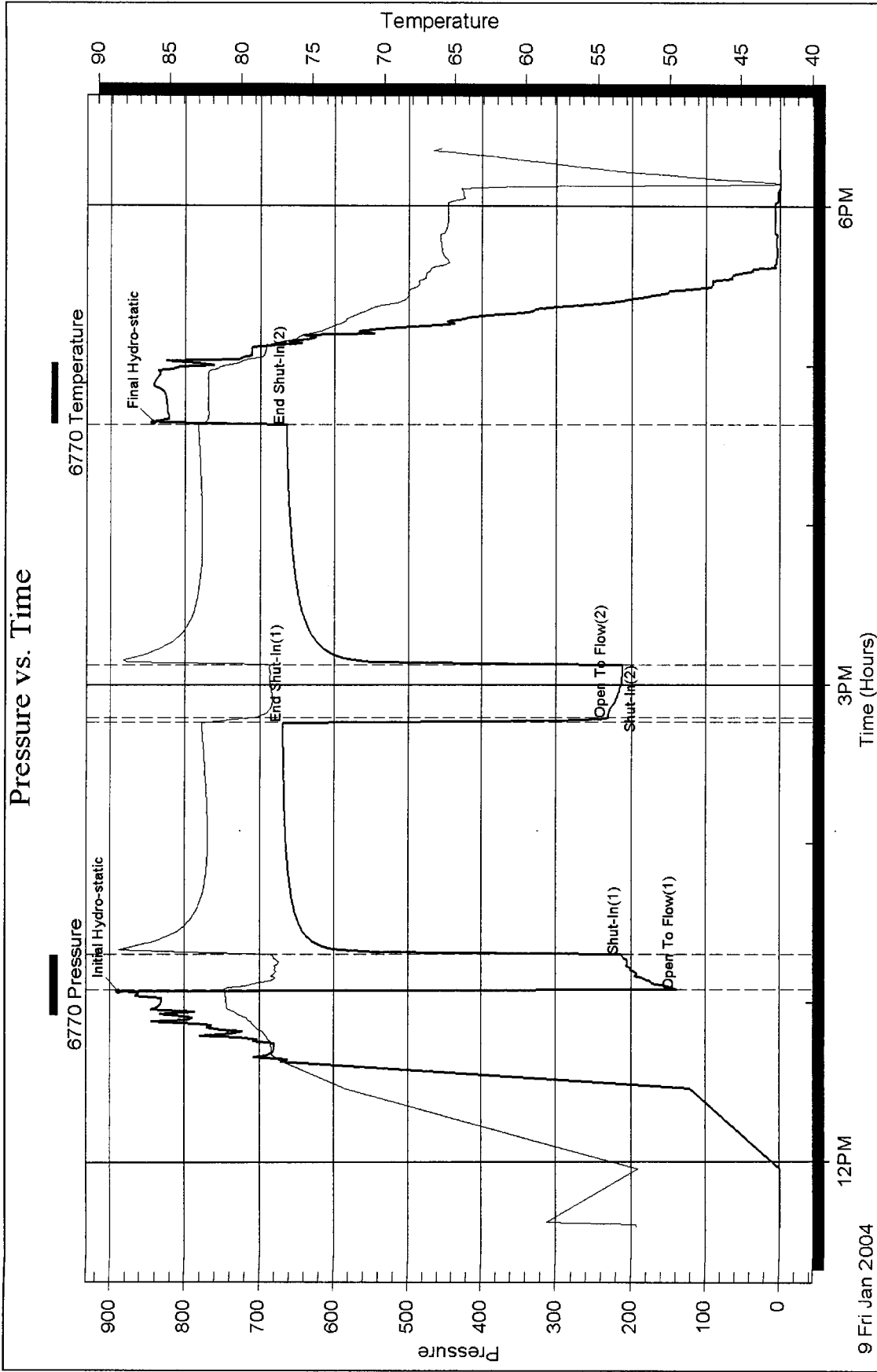
Gas Rates Information

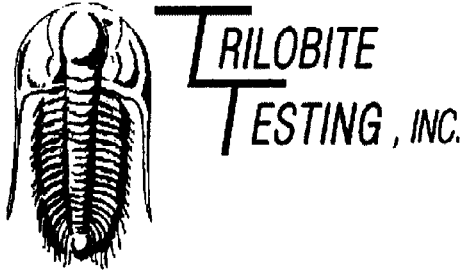
Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
1	5	0.75	50.00	1005.92
1	10	0.75	55.00	1084.02
2	5	0.75	70.00	1318.32
2	10	0.75	70.00	1318.32
2	15	0.75	70.00	1318.32
2	20	0.75	70.00	1318.32

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Larson Operating Co**

562 West Highway 4
Olmitz Ks 67564

ATTN: Tom Larson

18-16-7-Ellsworth-Ks

1-18 Schroeder Trust

Start Date: 2004.01.10 @ 04:10:18

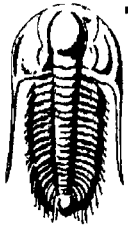
End Date: 2004.01.10 @ 09:05:03

Job Ticket #: 18425 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Operating Co
562 West Highway 4
Olmitz Ks 67564
ATTN: Tom Larson

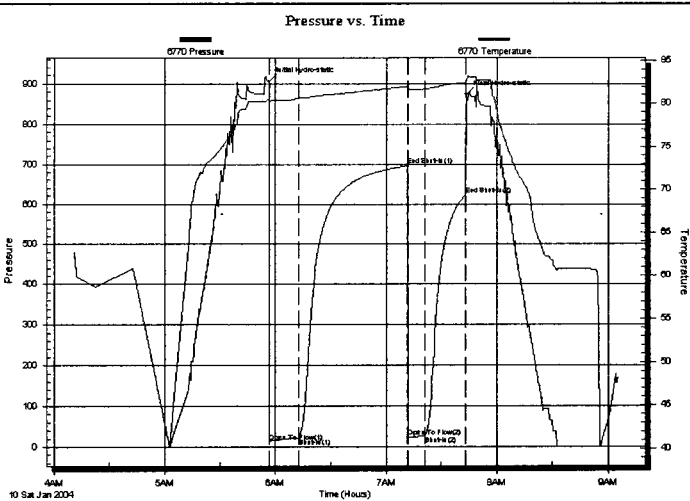
1-18 Schroeder Trust
18-16-7-Ellsworth-Ks
Job Ticket: 18425 **DST#: 2**
Test Start: 2004.01.10 @ 04:10:18

GENERAL INFORMATION:

Formation: **Tarkio**
Deviated: **No** Whipstock: ft (KB)
Time Tool Opened: 05:56:48
Time Test Ended: 09:05:03
Interval: **1879.00 ft (KB) To 1918.00 ft (KB) (TVD)**
Total Depth: 1918.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole
Tester: Dan Bangle
Unit No: 21
Reference Elevations: 1576.00 ft (KB)
1568.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6770 Inside
Press@RunDepth: 27.50 psig @ 1880.00 ft (KB) Capacity: 7000.00 psig
Start Date: 2004.01.10 End Date: 2004.01.10 Last Calib.: 2004.01.10
Start Time: 04:10:33 End Time: 09:05:03 Time On Btm: 2004.01.10 @ 05:56:33
Time Off Btm: 2004.01.10 @ 07:43:33

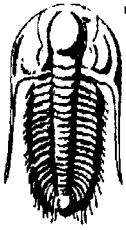
TEST COMMENT: IF-Weak building to 1 1/4"
FF-Weak steady surface blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	906.22	80.53	Initial Hydro-static
1	12.20	80.18	Open To Flow (1)
16	21.98	80.65	Shut-In (1)
75	696.03	81.99	End Shut-In (1)
76	23.45	81.75	Open To Flow (2)
85	27.50	81.71	Shut-In (2)
107	622.08	82.44	End Shut-In (2)
107	874.16	82.57	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
40.00	DM	1231.14

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Operating Co
562 West Highway 4
Olmitz Ks 67564
ATTN: Tom Larson

1-18 Schroeder Trust
18-16-7-Ellsworth-Ks
Job Ticket: 18425 **DST#: 2**
Test Start: 2004.01.10 @ 04:10:18

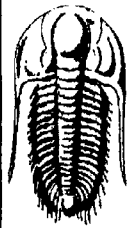
Tool Information

Drill Pipe: Length: 1688.00 ft	Diameter: 1596.00 inches	Volume: 4176834. bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe: Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar: Length: 178.00 ft	Diameter: 178.00 inches	Volume: 5478.59 bbl	Weight to Pull Loose: 31000.00 lb
	Total Volume: 4182313. bbl		Tool Chased 0.00 ft
Drill Pipe Above KB: 10.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer: 1879.00 ft			Final 30000.00 lb
Depth to Bottom Packer: ft			
Interval between Packers: 39.00 ft			
Tool Length: 62.00 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			1857.00	
Shut In Tool	5.00			1862.00	
Sampler	2.00			1864.00	
Hydraulic tool	5.00			1869.00	
Packer	5.00			1874.00	23.00 Bottom Of Top Packer
Packer	5.00			1879.00	
Stubb	1.00			1880.00	
Recorder	0.00	6770	Inside	1880.00	
Perforations	35.00			1915.00	
Recorder	0.00	13254	Outside	1915.00	
Bullnose	3.00			1918.00	39.00 Bottom Packers & Anchor

Total Tool Length: 62.00



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TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Operating Co

1-18 Schroeder Trust

562 West Highway 4
Olmitz Ks 67564

18-16-7-Ellsworth-Ks

Job Ticket: 18425

DST#: 2

ATTN: Tom Larson

Test Start: 2004.01.10 @ 04:10:18

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: 42.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.58 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 9000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	DM	1231.145

Total Length: 40.00 ft Total Volume: 1231.145 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

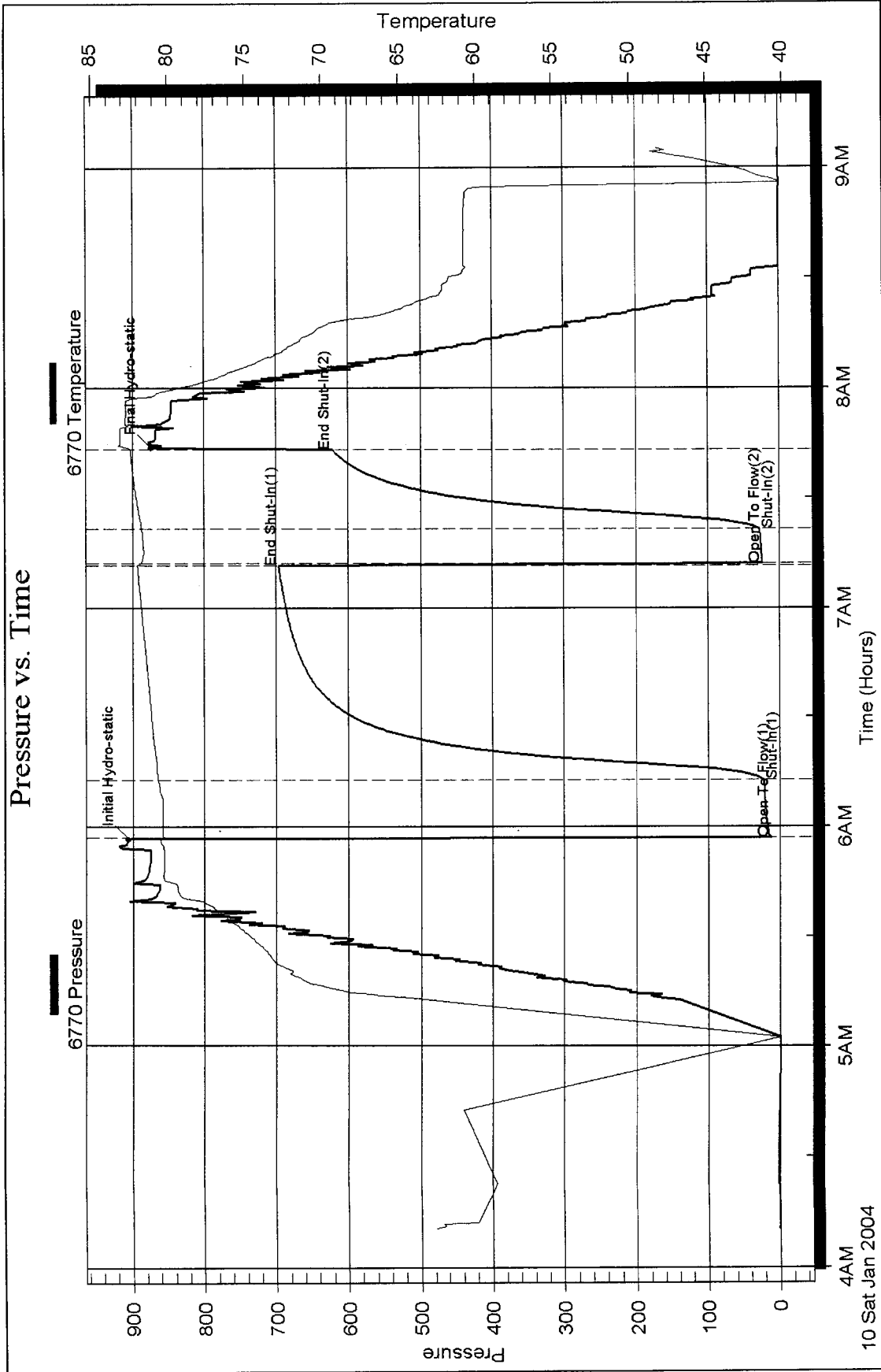
Serial #:

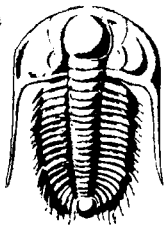
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

INV
6/32

N^o 18424

05/03

Test Ticket

Well Name & No. 1-18 Schroeder Trust Test No. 1 Date 1-9-04
 Company Larsen Operating Co. Zone Tested Grand Haven Sd
 Address 562 W. Highway 4, Olmitz, Ks. 67564 Elevation 1576 KB 1568 GL
 Co. Rep / Geo. Kris Kennedy Cont. Duke #8 Est. Ft. of Pay _____ Por. _____ %
 Location: Sec. 18 Twp. 16 Rge. 7 Co. Ellsworth State Ks
 No. of Copies _____ Distribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 1769 - 1796 Initial Str Wt./Lbs. 30,000 Unseated Str Wt./Lbs. 30,000
 Anchor Length 27 Wt. Set Lbs. 20,000 Wt. Pulled Loose/Lbs. 31,000
 Top Packer Depth 1764 Tool Weight 1900
 Bottom Packer Depth 1769 Hole Size 7 7/8" Rubber Size 6 3/4"
 Total Depth 1796 Wt. Pipe Run _____ Drill Collar Run 178
 Mud Wt. 8.6 LCM _____ Vis. 36 WL 10.2 Drill Pipe Size 4.5 XH Ft. Run 1595
 Blow Description I.F. Strong - B.O.B in 20 Sec - GTS in 2 min. Gauged and sample taken
E.F. Strong - B.O.B. as soon as tool opened - Gauged and sample taken.
 Recovery - Total Feet 5 GIP GTS Ft. in DC 5 Ft. in DP _____
 Rec. 5 Feet of D.m. %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 BHT 82 °F Gravity _____ °API D @ _____ °F Corrected Gravity _____ °API
 RW _____ @ _____ °F Chlorides _____ ppm Recovery _____ Chlorides 7100 ppm System

	AK-1	Alpine	Recorder No.	Test
(A) Initial Hydrostatic Mud	888	PSI	<u>36770</u>	<u>700</u>
(B) First Initial Flow Pressure	139	PSI	(depth) <u>1770</u>	Elec. Rec. <u>X</u> <u>150</u>
(C) First Final Flow Pressure	213	PSI	Recorder No. <u>13254</u>	Jars _____
(D) Initial Shut-In Pressure	668	PSI	(depth) <u>1793</u>	Safety Jt. _____
(E) Second Initial Flow Pressure	230	PSI	Recorder No. _____	Circ Sub _____
(F) Second Final Flow Pressure	212	PSI	(depth) _____	Sampler <u>X</u> <u>200</u>
(G) Final Shut-In Pressure	663	PSI	Initial Opening <u>10</u>	Straddle _____
(Q) Final Hydrostatic Mud	842	PSI	Initial Shut-In <u>90</u>	Ext. Packer _____
			Final Flow <u>20</u>	Shale Packer _____
			Final Shut-In <u>90</u>	Mileage <u>74 148</u> <u>125.80</u>
			T-On Location <u>10:45</u>	Sub Total: <u>1175.80</u>
			T-Started <u>11:35</u>	Std. By _____
			T-Open <u>13:04</u>	Other _____
			T-Pulled <u>16:36</u>	Total: _____
			T-Out <u>18:21</u>	

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.

Approved By [Signature]
 Our Representative Don Benge

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 18424 Date 1-9-04
Company Name Larson Operating Co.
Lease 1-18 Schroeder Trust Test No. 1
County Ellsworth Sec. 18 Twp. 16 Rng. 7

SAMPLER RECOVERY

Gas 4.4 Cu.FT ME
Oil 0 ML
Mud 0 ML
Water 0 ML
Other 0 ML
Pressure 750 PSI
Total 4.4 Cu.FT ME

PIT MUD ANALYSIS

Chlorides 7100 ppm.
Resistivity _____ ohms @ _____ F
Viscosity 36
Mud Weight 8.6
Filtrate 10.2
Other _____

SAMPLER ANALYSIS

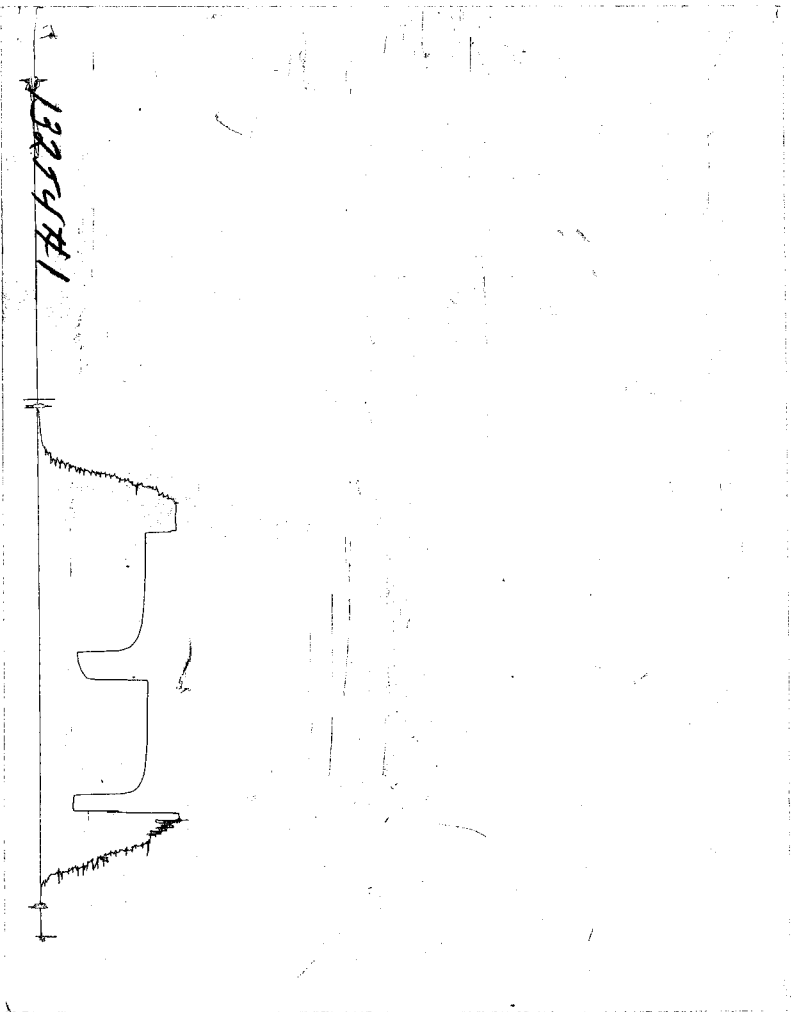
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
Gravity _____ corrected @ 60 F

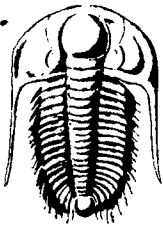
PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
BOTTOM
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

Nº 18425

05/03

Test Ticket

Well Name & No. 1-18 Schroeder Trust Test No. 2 Date 1-10-04
 Company Harsen Operating Co. Zone Tested Tackie
 Address _____ Elevation 1576 KB 1568 GL _____
 Co. Rep / Geo. Tim Hedrick Cont. Duke #8 Est. Ft. of Pay _____ Por. _____ %
 Location: Sec. 18 Twp. 16 Rge. 7 Co. Ellsworth State Ks
 No. of Copies _____ Distribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 1879 — 1918 Initial Str Wt./Lbs. 39000 Unseated Str Wt./Lbs. 39000
 Anchor Length 39 Wt. Set Lbs. 29000 Wt. Pulled Loose/Lbs. 31500
 Top Packer Depth _____ Tool Weight 2100
 Bottom Packer Depth 1879 Hole Size 7 7/8" Rubber Size 6 3/4"
 Total Depth 1918 Wt. Pipe Run _____ Drill Collar Run 128
 Mud Wt. 9 LCM _____ Vis. 42 WL 10.6 Drill Pipe Size 4.5XH Ft. Run 1688
 Blow Description F.F. Weak - building to 1 1/4"

F.F. Weak steady surface blow

Recovery - Total Feet 40 GIP _____ Ft. in DC 40 Ft. in DP _____
 Rec. 40 Feet of D.M. %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet of _____ %gas _____ %oil _____ %water _____ %mud _____
 BHT 82 °F Gravity _____ °API D @ _____ °F Corrected Gravity _____ °API
 RW _____ @ _____ °F Chlorides _____ ppm Recovery _____ Chlorides 9,000 ppm System

	AK-1	Alpine	Recorder No.	Test
(A) Initial Hydrostatic Mud	<u>906</u>	PSI	<u>6770</u>	<u>700</u>
(B) First Initial Flow Pressure	<u>12</u>	PSI	(depth) <u>1880</u>	Elec. Rec. <u>X</u> <u>150</u>
(C) First Final Flow Pressure	<u>21</u>	PSI	Recorder No. <u>13254</u>	Jars _____
(D) Initial Shut-In Pressure	<u>696</u>	PSI	(depth) <u>1915</u>	Safety Jt. _____
(E) Second Initial Flow Pressure	<u>23</u>	PSI	Recorder No. _____	Circ Sub _____
(F) Second Final Flow Pressure	<u>27</u>	PSI	(depth) _____	Sampler <u>X</u> <u>200</u>
(G) Final Shut-In Pressure	<u>622</u>	PSI	Initial Opening <u>15</u>	Straddle _____
(Q) Final Hydrostatic Mud	<u>874</u>	PSI	Initial Shut-In <u>60</u>	Ext. Packer _____
			Final Flow <u>10</u>	Shale Packer _____
			Final Shut-In <u>30</u>	Mileage <u>13</u> <u>22.10</u>
			T-On Location <u>02:30</u>	Sub Total: <u>1072.10</u>
			T-Started <u>04:10</u>	Std. By _____
			T-Open <u>05:55</u>	Other _____
			T-Pulled <u>07:40</u>	Total: _____
			T-Out <u>09:05</u>	

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Approved By [Signature]
 Our Representative [Signature]

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 18425 Date 1-10-04
Company Name harsco Operating Co.
Lease 1-18 Schroeder Trust Test No. 2
County Ellsworth Sec. 18 Twp. 16 Rng. 7

SAMPLER RECOVERY

Gas 0 ML
Oil 0 ML
Mud 3000 ML
Water 0 ML
Other 0 ML
Pressure 500 PSI
Total 3000 ML

PIT MUD ANALYSIS

Chlorides 9000 ppm.
Resistivity _____ ohms @ _____ F
Viscosity 42
Mud Weight 9
Filtrate 10.6
Other _____

SAMPLER ANALYSIS

Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

BOTTOM
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart

