

DRILL STEM TEST REPORT

Prepared For: **IA Operating Inc**

900 N. Tyler Road #14
Wichita, Ks 67212

ATTN: Randy Kilian

23-21-14 Stafford

Keenan #23-1

Start Date: 2004.02.29 @ 17:13:51

End Date: 2004.02.29 @ 23:03:51

Job Ticket #: 18024 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

IA Operating Inc
900 N. Tyler Road #14
Wichita, Ks 67212
ATTN: Randy Kilian

Keenan #23-1

23-21-14 Stafford

Job Ticket: 18024

DST#: 1

Test Start: 2004.02.29 @ 17:13:51

GENERAL INFORMATION:

Formation: **LKC "H"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:21

Time Test Ended: 23:03:51

Test Type: Conventional Bottom Hole

Tester: Nick Budig

Unit No: 16

Interval: **3503.00 ft (KB) To 3527.00 ft (KB) (TVD)**

Total Depth: 3527.00 ft (KB) (TVD)

Hole Diameter: 7.78 inches Hole Condition: Fair

Reference Elevations: 1931.00 ft (KB)

1926.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6751 Inside

Press@RunDepth: 116.32 psig @ 3504.00 ft (KB)

Start Date: 2004.02.29

End Date:

2004.02.29

Start Time: 17:13:56

End Time:

23:03:50

Capacity: 7000.00 psig

Last Calib.: 2004.02.29

Time On Btm: 2004.02.29 @ 18:45:51

Time Off Btm: 2004.02.29 @ 21:28:21

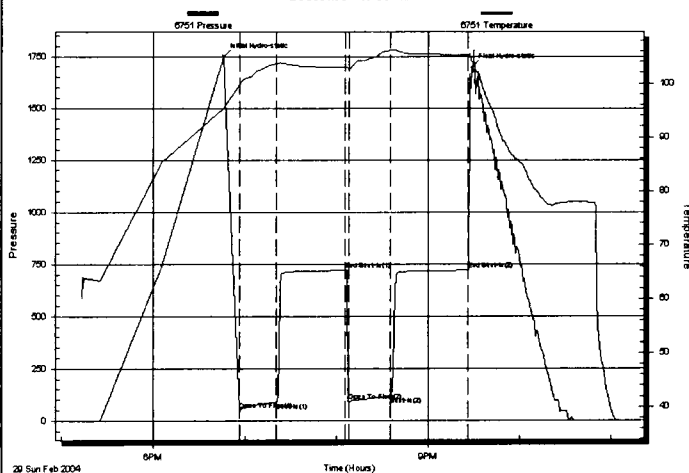
TEST COMMENT: IF-Fair Blow slowly building to 9.5 inches in bucket

IS- No Blow

FF- Weak Blow 2 inches in bucket

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

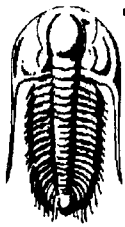
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1749.27	95.24	Initial Hydro-static
11	48.47	99.85	Open To Flow (1)
35	89.02	103.61	Shut-in(1)
80	719.65	102.94	End Shut-in(1)
83	92.76	102.82	Open To Flow (2)
110	116.32	106.18	Shut-in(2)
160	719.31	105.32	End Shut-in(2)
163	1696.73	104.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
210.00	Muddy Water	1.54

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

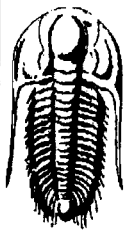
I A Operating Inc
900 N. Tyler Road #14
Wichita, Ks 67212
ATTN: Randy Kilian

Keenan #23-1
23-21-14 Stafford
Job Ticket: 18024 **DST#: 1**
Test Start: 2004.02.29 @ 17:13:51

Tool Information

Drill Pipe:	Length: 3365.00 ft	Diameter: 3.38 inches	Volume: 37.34 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 128.00 ft	Diameter: 2.25 inches	Volume: 0.63 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 37.97 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3503.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	44.00 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			3484.00	
Shut In Tool	5.00			3489.00	
Hydraulic tool	5.00			3494.00	
Packer	4.00			3498.00	20.00 Bottom Of Top Packer
Packer	5.00			3503.00	
Stubb	1.00			3504.00	
Recorder	0.00	6751	Inside	3504.00	
Perforations	20.00			3524.00	
Recorder	0.00	13630	Outside	3524.00	
Bullnose	3.00			3527.00	24.00 Bottom Packers & Anchor
Total Tool Length:	44.00				



TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

IA Operating Inc

Keenan #23-1

900 N. Tyler Road #14
Wichita, Ks 67212

23-21-14 Stafford

Job Ticket: 18024

DST#: 1

ATTN: Randy Kilian

Test Start: 2004.02.29 @ 17:13:51

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: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
210.00	Muddy Water	1.540

Total Length: 210.00 ft Total Volume: 1.540 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

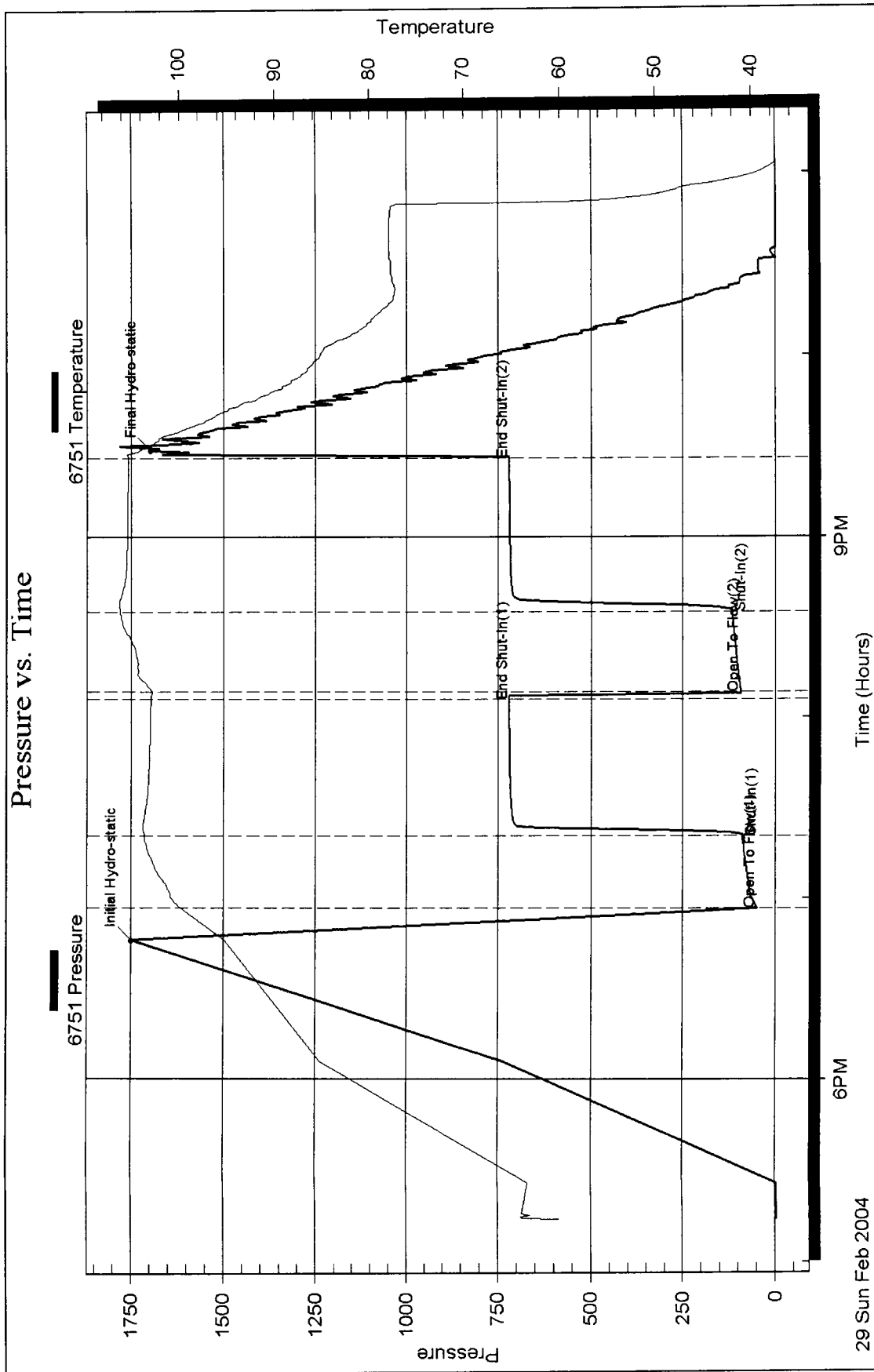
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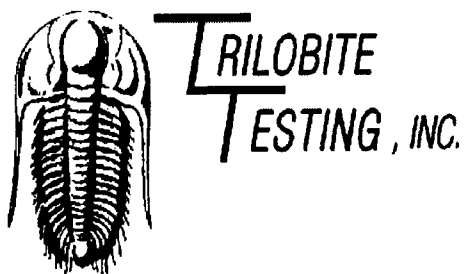
Inside

IA Operating Inc

23-21-14 Stafford

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **IA Operating Inc**

900 N. Tyler Road #14
Wichita, Ks 67212

ATTN: Randy Kilian

23-21-14 Stafford

Keenan #23-1

Start Date: 2004.03.01 @ 10:44:11

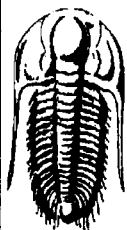
End Date: 2004.03.01 @ 16:41:20

Job Ticket #: 18025 DST #: 2

Trilobite Testing, Inc

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TRILOBITE
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DRILL STEM TEST REPORT

IA Operating Inc
900 N. Tyler Road #14
Wichita, Ks 67212
ATTN: Randy Kilian

Keenan #23-1

23-21-14 Stafford

Job Ticket: 18025

DST#:2

Test Start: 2004.03.01 @ 10:44:11

GENERAL INFORMATION:

Formation: **Kansas City J-k**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:24:21

Time Test Ended: 16:41:20

Test Type: Conventional Bottom Hole

Tester: Nathan

Unit No: 16

Interval: **3542.00 ft (KB) To 3595.00 ft (KB) (TVD)**

Total Depth: 3595.00 ft (KB) (TVD)

Hole Diameter: 7.78 inches Hole Condition: Fair

Reference Elevations: 1931.00 ft (KB)

1926.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6751

Inside

Press@RunDepth: 66.80 psig @ 3577.00 ft (KB)

Start Date: 2004.03.01

End Date:

2004.03.01

Start Time: 10:44:16

End Time:

16:41:21

Capacity: 7000.00 psig

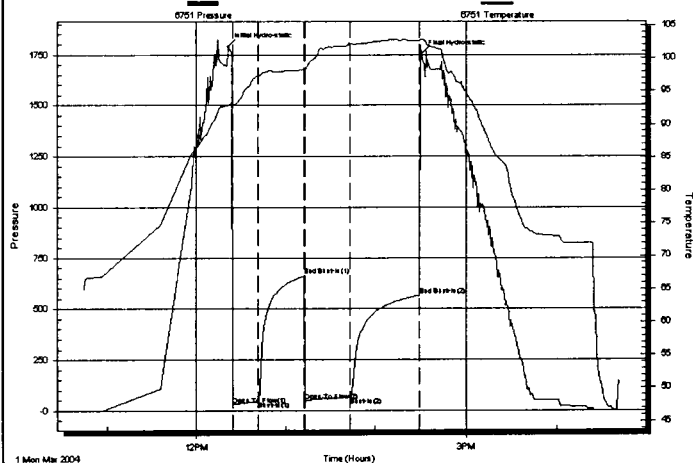
Last Calib.: 1899.12.30

Time On Btm: 2004.03.01 @ 12:21:31

Time Off Btm: 2004.03.01 @ 14:30:31

TEST COMMENT: IF- Weak surface blow building to 3/4 inch
IS- No blow
FF- Weak surface blow building to 1/4 inch
FS- No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1790.21	92.82	Initial Hydro-static
3	29.65	92.39	Open To Flow (1)
21	45.80	97.41	Shut-In(1)
51	661.23	98.28	End Shut-In(1)
52	48.03	98.14	Open To Flow (2)
82	66.80	102.15	Shut-In(2)
128	565.56	102.66	End Shut-In(2)
129	1753.47	102.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
92.00	Mud 100% mud	0.45

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

IA Operating Inc

Keenan #23-1

900 N. Tyler Road #14
Wichita, Ks 67212

23-21-14 Stafford

Job Ticket: 18025

DST#: 2

ATTN: Randy Kilian

Test Start: 2004.03.01 @ 10:44:11

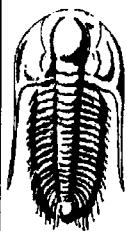
Tool Information

Drill Pipe:	Length: 3427.00 ft	Diameter: 3.80 inches	Volume: 48.07 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 128.00 ft	Diameter: 2.25 inches	Volume: 0.63 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 48.70 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3542.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	53.00 ft			
Tool Length:	73.00 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			3523.00	
Shut In Tool	5.00			3528.00	
Hydraulic tool	5.00			3533.00	
Packer	4.00			3537.00	20.00 Bottom Of Top Packer
Packer	5.00			3542.00	
Stubb	1.00			3543.00	
Perforations	2.00			3545.00	
Change Over Sub	1.00			3546.00	
Blank Spacing	31.00			3577.00	
Recorder	0.00	6751	Inside	3577.00	
Change Over Sub	1.00			3578.00	
Perforations	14.00			3592.00	
Recorder	0.00	13630	Outside	3592.00	
Bullnose	3.00			3595.00	53.00 Bottom Packers & Anchor

Total Tool Length: 73.00



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FLUID SUMMARY

I A Operating Inc

Keenan #23-1

900 N. Tyler Road #14
Wichita, Ks 67212

23-21-14 Stafford

Job Ticket: 18025

DST#: 2

ATTN: Randy Kilian

Test Start: 2004.03.01 @ 10:44:11

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:

13000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.76 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
92.00	Mud 100%mud	0.452

Total Length: 92.00 ft

Total Volume: 0.452 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

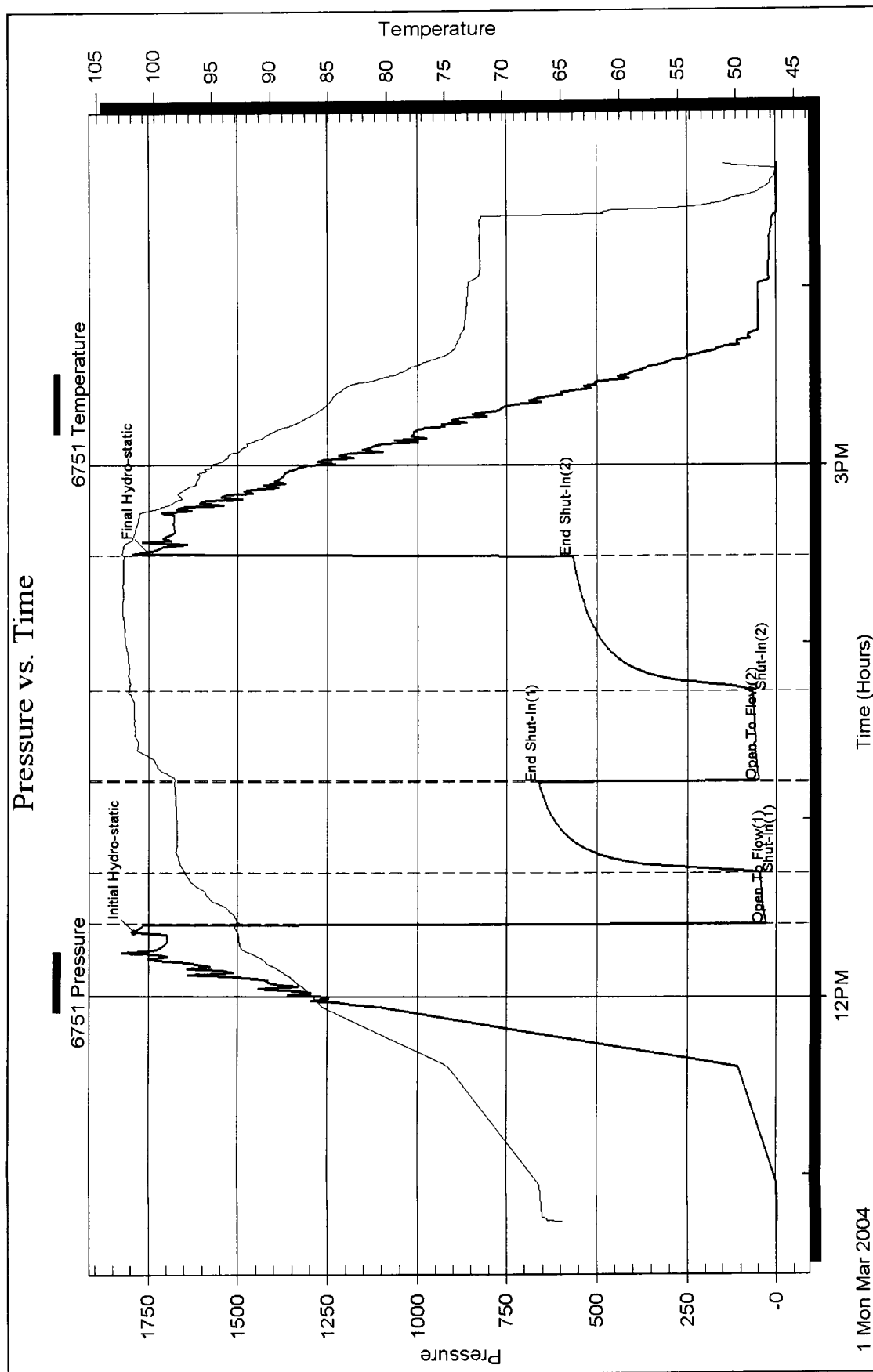
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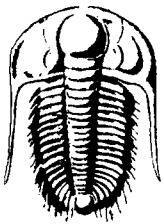
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

Nº 18024

05/03

Test Ticket

Well Name & No. Keenan #23-1 Test No. 1 Date 2-29-04
Company IA Operating Inc Zone Tested LKC "H"
Address 900 N. Tyler Road #14 Wichita, KS 67212 Elevation 1931 KB 1926 GL
Co. Rep / Geo. Randy Killian Cont. Murfin #16 Est. Ft. of Pay _____ Por. _____ %
Location: Sec. 23 Twp. 21 Rge. 14 Co. Stafford State Ks
No. of Copies _____ Distribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 3503- 3527 Initial Str Wt./Lbs. 70,000 Unseated Str Wt./Lbs. 72,000
Anchor Length 24' Wt. Set Lbs. 28,000 Wt. Pulled Loose/Lbs. 85,000
Top Packer Depth 3498 Tool Weight 2200
Bottom Packer Depth 3503 Hole Size 7 7/8" ☒ Rubber Size 6 3/4" ☒
Total Depth 3527 Wt. Pipe Run 0 Drill Collar Run 128
Mud Wt. 9.3 LCM _____ Vis. 48 WL 8.0 Drill Pipe Size 4 1/2 Ft. Run 3365
Blow Description IF - Fair blow slowly building to 9.5 inches in Bucket
ISI - No Blow
FF - Weak Blow 2 inches in Bucket
FSI - No Blow

Recovery - Total Feet 210 GIP _____ Ft. in DC 120 Ft. in DP 90
Rec. 210 Feet of Muddy Water %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 165 °F Gravity _____ °API D @ _____ °F Corrected Gravity _____ °API
RW .18 @ 33.5 °F Chlorides 150,000 ppm Recovery _____ Chlorides 3,600 ppm System

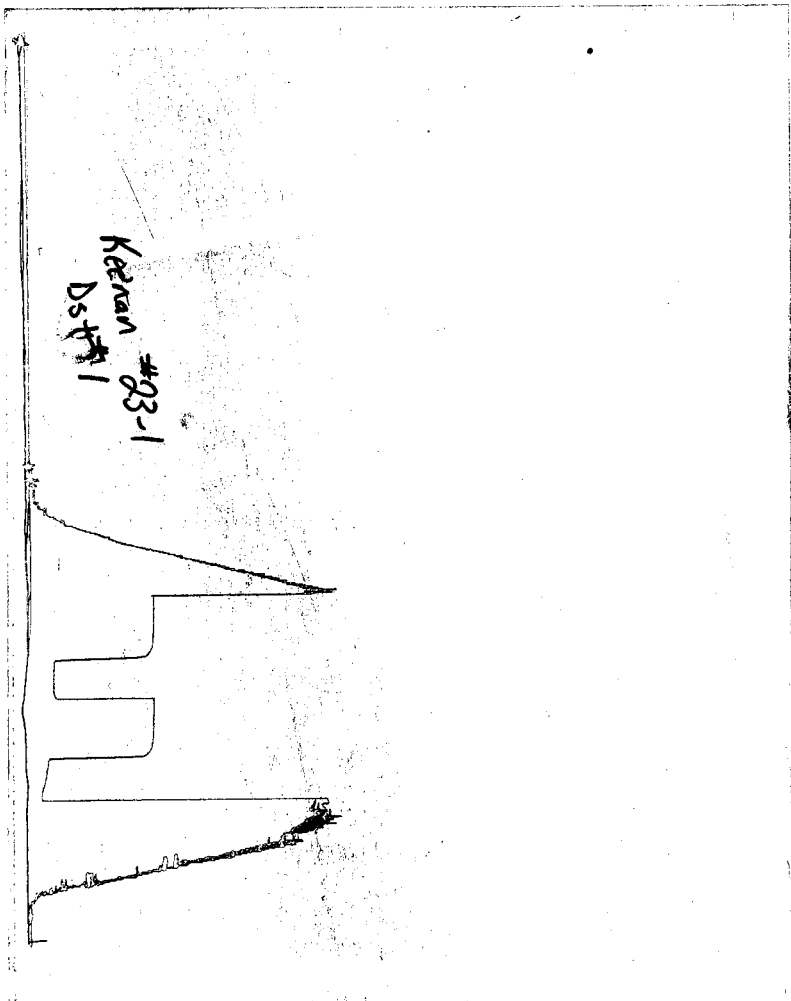
	AK-1	Alpine				
(A) Initial Hydrostatic Mud		<u>1749</u>	PSI	Recorder No.	<u>6751</u>	Test ☒ <u>700</u>
(B) First Initial Flow Pressure		<u>48</u>	PSI	(depth)	<u>3504</u>	Elec. Rec. ☒ <u>150</u>
(C) First Final Flow Pressure		<u>89</u>	PSI	Recorder No.	<u>13630</u>	Jars _____
(D) Initial Shut-In Pressure		<u>720</u>	PSI	(depth)	<u>3524</u>	Safety Jt. _____
(E) Second Initial Flow Pressure		<u>93</u>	PSI	Recorder No.		Circ Sub _____
(F) Second Final Flow Pressure		<u>116</u>	PSI	(depth)		Sampler _____
(G) Final Shut-In Pressure		<u>719</u>	PSI	Initial Opening	<u>30</u>	Straddle _____
(Q) Final Hydrostatic Mud		<u>1697</u>	PSI	Initial Shut-In	<u>45</u>	Ext. Packer _____
				Final Flow	<u>30</u>	Shale Packer _____
				Final Shut-In	<u>45</u>	Mileage <u>44</u> <u>74.80</u>
				T-On Location	<u>4:15</u>	Sub Total: <u>924.80</u>
				T-Started	<u>17:13</u>	Std. By _____
				T-Open	<u>18:49</u>	Other _____
				T-Pulled	<u>21:20</u>	Total: _____
				T-Out	<u>22:55</u>	

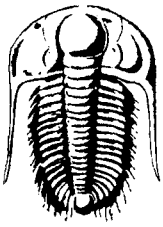
TRILOBITE TESTING INC. SHALL NOT BE LIABLE FOR DAMAGED OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By _____
Our Representative Nick Burby

CHART PAGE

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





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

Nº 18025

05/03

Test Ticket

Well Name & No. <u>Keenan #23-1</u>	Test No. <u>2</u>	Date <u>3/1/04</u>
Company <u>IADC</u>	Zone Tested <u>LKC J-K</u>	
Address <u>900 N. Tyler Road #14 Wichita, KS 67212</u>	Elevation <u>1931</u> KB	<u>1926</u> GL
Co. Rep / Geo. <u>Pandy Killian</u>	Cont. <u>Martin Drg #14</u>	Est. Ft. of Pay _____ Por. _____ %
Location: Sec. <u>23</u> Twp. <u>21</u> Rge. <u>14</u> Co. <u>Stafford</u>	State <u>KS</u>	
No. of Copies _____	Disbtribution Sheet (Y, N) _____	Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested <u>3542 - 3595</u>	Initial Str Wt./Lbs. <u>70,000</u>	Unseated Str Wt./Lbs. <u>70,000</u>
Anchor Length <u>53'</u>	Wt. Set Lbs. <u>22,000</u>	Wt. Pulled Loose/Lbs. <u>80,000</u>
Top Packer Depth <u>3537</u>	Tool Weight <u>2200</u>	
Bottom Packer Depth <u>3542</u>	Hole Size <u>7 7/8"</u> ✓	Rubber Size <u>6 3/4"</u> ✓
Total Depth <u>3595</u>	Wt. Pipe Run <u>-0-</u>	Drill Collar Run <u>128</u>
Mud Wt. <u>9.3</u> LCM <u>-0-</u> Vis. <u>52</u> WL <u>8.8</u>	Drill Pipe Size <u>4 1/2</u>	Ft. Run <u>3427</u>

Blow Description IF - weak surface blow building to 3/4 inch
IST - No blow
FF - weak surface blow building to 1/4 inch
FST - No blow

Recovery - Total Feet <u>92</u>	GIP <u>-0-</u>	Ft. in DC <u>92</u>	Ft. in DP <u>-0-</u>
Rec. <u>92</u>	Feet of <u>Mud</u>	%gas _____ %oil _____ %water <u>100</u> %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 103 °F Gravity _____ °API D @ _____ °F Corrected Gravity _____ °API
 RW 758 @ 43.6 °F Chlorides 13,000 ppm Recovery _____ Chlorides 5,000 ppm System

(A) Initial Hydrostatic Mud <u>1790</u> PSI	Recorder No. <u>6751</u>	Test <u>bottom hole</u> <u>700</u>
(B) First Initial Flow Pressure <u>30</u> PSI	(depth) <u>3577</u>	Elec. Rec. <u>✓</u> <u>100</u>
(C) First Final Flow Pressure <u>46</u> PSI	Recorder No. <u>13630</u>	Jars _____
(D) Initial Shut-In Pressure <u>661</u> PSI	(depth) <u>3592</u>	Safety Jt. _____
(E) Second Initial Flow Pressure <u>48</u> PSI	Recorder No. _____	Circ Sub _____
(F) Second Final Flow Pressure <u>67</u> PSI	(depth) _____	Sampler _____
(G) Final Shut-In Pressure <u>566</u> PSI	Initial Opening <u>20</u>	Straddle _____
(Q) Final Hydrostatic Mud <u>1753</u> PSI	Initial Shut-In <u>30</u>	Ext. Packer _____
	Final Flow <u>30</u>	Shale Packer _____
	Final Shut-In <u>45</u>	Mileage <u>44</u> <u>74.80</u>
	T-On Location <u>10:25</u>	Sub Total: <u>924.80</u>
	T-Started <u>10:44</u>	Std. By _____
	T-Open <u>12:22</u>	Other! <u>4 art copies</u>
	T-Pulled <u>14:27</u>	Total: _____
	T-Out <u>16:41</u>	

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Approved By _____

Our Representative John Berdy

CHART PAGE

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

