

15-077-21474

20-33s-6w



DRILL STEM TEST REPORT

Prepared For: **M.E.Klein & Assoc.Inc.**

P.O.Box 721436
Norman Ok.73070

ATTN: Tim Hellman

20-33s-6w Harper Ks.

Carothers #1

Start Date: 2004.03.20 @ 16:27:19

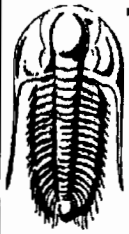
End Date: 2004.03.20 @ 22:40:19

Job Ticket #: 18772 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

M.E.Klein & Assoc.Inc.

Carothers #1

P.O.Box 721436
Norman Ok.73070

20-33s-6w Harper Ks.

Job Ticket: 18772

DST#: 1

ATTN: Tim Hellman

Test Start: 2004.03.20 @ 16:27:19

GENERAL INFORMATION:

Formation: **Miss.**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:14:34

Time Test Ended: 22:40:19

Test Type: Conventional Bottom Hole

Tester: Gary Pevoteaux

Unit No: 23

Interval: **4466.00 ft (KB) To 4480.00 ft (KB) (TVD)**

Total Depth: 4480.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 1343.00 ft (KB)

1335.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 1242.49 psig @ 4467.00 ft (KB)

Start Date: 2004.03.20

End Date:

2004.03.20

Capacity: 7000.00 psig

Last Calib.: 2004.03.20

Start Time: 16:27:24

End Time:

22:40:18

Time On Btrc: 2004.03.20 @ 18:13:04

Time Off Btrc: 2004.03.20 @ 20:23:19

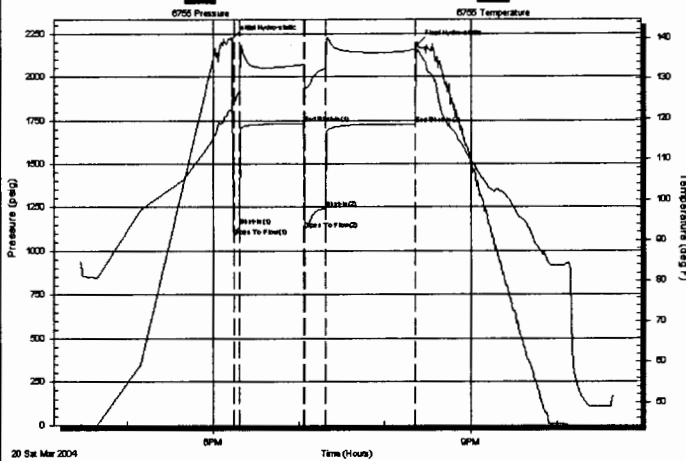
TEST COMMENT: IF:Strong blow . GTS in 1 min.

IS:No blow .

FF:Strong blow . (see gas volume report)

FST:No blow .

Pressure vs. Time



PRESSURE SUMMARY

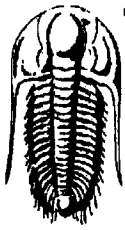
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2218.15	122.17	Initial Hydro-static
2	1084.32	124.48	Open To Flow (1)
6	1141.73	127.15	Shut-In(1)
51	1729.44	133.50	End Shut-In(1)
51	1123.15	130.01	Open To Flow (2)
66	1242.49	132.46	Shut-In(2)
129	1727.28	137.16	End Shut-In(2)
131	2188.04	137.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Condensate	0.07

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	1.00	170.00	5301.28
Last Gas Rate	1.00	218.00	6681.22
Max. Gas Rate	1.00	218.00	6681.22



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DRILL STEM TEST REPORT

TOOL DIAGRAM

M.E.Klein & Assoc.Inc.

Carothers #1

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Norman Ok.73070

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Job Ticket: 18772

DST#: 1

ATTN: Tim Hellman

Test Start: 2004.03.20 @ 16:27:19

Tool Information

Drill Pipe:	Length: 4460.00 ft	Diameter: 3.80 inches	Volume: 62.56 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 62.56 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4466.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	14.00 ft			
Tool Length:	41.00 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			4440.00	
Shut In Tool	5.00			4445.00	
Hydraulic tool	5.00			4450.00	
Jars	5.00			4455.00	
Safety Joint	2.00			4457.00	
Packer	4.00			4461.00	27.00 Bottom Of Top Packer
Packer	5.00			4466.00	
Stubb	1.00			4467.00	
Recorder	0.00	6755	Inside	4467.00	
Perforations	8.00			4475.00	
Recorder	0.00	13222	Outside	4475.00	
Bullnose	5.00			4480.00	14.00 Bottom Packers & Anchor

Total Tool Length: 41.00



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FLUID SUMMARY

M.E.Klein & Assoc.Inc.

Carothers #1

P.O.Box 721436
Norman Ok.73070

20-33s-6w Harper Ks.

Job Ticket: 18772

DST#: 1

ATTN: Tim Hellman

Test Start: 2004.03.20 @ 16:27:19

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: 47.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 5000.00 ppm			
Filter Cake: 0.20 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Condensate	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

Num Gas Bombs: 1

Serial #: gp-1

Laboratory Name: Caraway

Laboratory Location: Liberal, KS

Recovery Comments:



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DRILL STEM TEST REPORT

GAS RATES

M.E.Klein & Assoc.Inc.

Carothers #1

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Norman Ok.73070

20-33s-6w Harper Ks.

Job Ticket: 18772

DST#: 1

ATTN: Tim Hellman

Test Start: 2004.03.20 @ 16:27:19

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)
2	5	1.00	170.00	5301.28
2	10	1.00	205.00	6307.49
2	15	1.00	218.00	6681.22

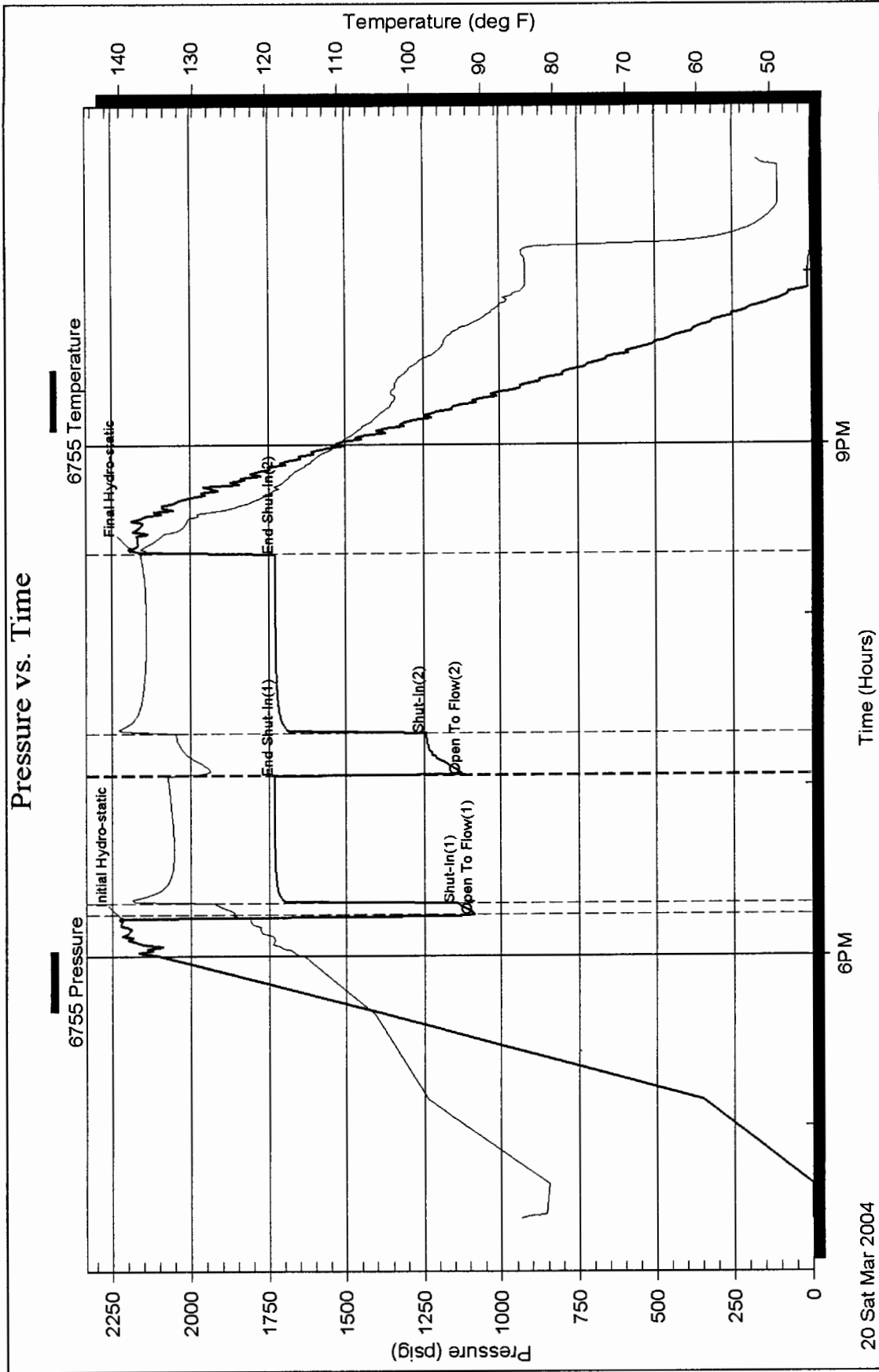
Serial #: 6755

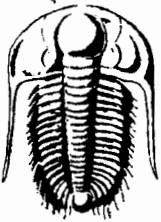
Inside

M.E. Klein & Assoc. Inc.

20-33s-6w Harper Ks.

DST Test Number: 1





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

N^o 18772

INV
6276

05/03

Test Ticket

Well Name & No. Carothers # 1 Test No. 1 Date 3-20-04
 Company M.E. Klein & Assoc. Inc. Zone Tested Miss
 Address P.O. Box 721436, Norman Ok 73070 Elevation 1343 KB 1335 GL
 Co. Rep / Geo. Tim Hellman Cont. Duke Dwy #2 Est. Ft. of Pay _____ Por. _____ %
 Location: Sec. 20 Twp. 33^c Rge. 6^w Co. Harper State ks.
 No. of Copies 5 Distribution Sheet (Y, N) N Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 4466 - 4480' Initial Str Wt./Lbs. 76,000 Unseated Str Wt./Lbs. 76,000
 Anchor Length 14' Wt. Set Lbs. 20,000 Wt. Pulled Loose/Lbs. 88,000
 Top Packer Depth 4461' Tool Weight 2100 #
 Bottom Packer Depth 4466' Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓
 Total Depth 4480' Wt. Pipe Run None Drill Collar Run None
 Mud Wt. 9.2 LCM 2[#] Vis. 47 WL 8.8cc Drill Pipe Size 4 1/2" Ft. Run 4460'
 Blow Description IF: Strong below. 2TS in 1 min. IST: No blow
FF: Strong below. (see gas volume report) FST: No blow.

Recovery - Total Feet 5 GIP yes Ft. in DC 0 Ft. in DP _____
 Rec. 5 Feet of Condensate %gas 100 %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 137 °F Gravity N/A °API D @ _____ °F Corrected Gravity N/A °API
 RW N.C. @ _____ °F Chlorides N/A ppm Recovery _____ Chlorides 5000 ppm System

	AK-1	Alpine	Recorder No.	Test
(A) Initial Hydrostatic Mud		2218 PSI	6755	✓ 800
(B) First Initial Flow Pressure		1084 PSI	(depth) 4467'	Elec. Rec. ✓ 150
(C) First Final Flow Pressure		1182 PSI	Recorder No. 13222	Jars ✓ 200
(D) Initial Shut-In Pressure		1729 PSI	(depth) 4475'	Safety Jt. ✓ 50
(E) Second Initial Flow Pressure		1123 PSI	Recorder No. _____	Circ Sub _____
(F) Second Final Flow Pressure		1242 PSI	(depth) _____	Sampler _____
(G) Final Shut-In Pressure		1727 PSI	Initial Opening <u>5</u>	Straddle _____
(Q) Final Hydrostatic Mud		2188 PSI	Initial Shut-In <u>45</u>	Ext. Packer _____

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Approved By TIM HELLMAN
 Our Representative Greg [Signature]

Final Flow	15	Shale Packer	
Final Shut-In	60	Mileage	150 ✓ 127.50
T-On Location	1558	Sub Total:	1275.00
T-Started	1627	Std. By	1327.50
T-Open	1814	Other	
T-Pulled	2024	Total:	✓ 1275.00
T-Out	2240		

CHART PAGE

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

