

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name KREUTZER "A" #1 Test No. 1 Date 11/21/93
Company AFG ENERGY, INC. Zone WINFIELD
Address P.O. BOX 458 HAYS KANSAS 67601 Elevation 2053
Co. Rep./Geo. ED GLASSMAN Cont. DUKE DRLG RIG #4 Est. Ft. of Pay _____
Location: Sec. 26 Twp. 16S Rge. 16W Co. RUSH State KS

Interval Tested <u>1980-2085</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>105</u>	Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth <u>1975</u>	Drill Collar - 2.25 Ft. Run <u>121</u>
Bottom Packer Depth <u>1980</u>	Mud Wt. <u>N/A</u> lb/Gal.
Total Depth <u>2085</u>	Viscosity <u>N/A</u> Filtrate <u>N/A</u>

Tool Open @ 1:46 PM Initial Blow 1" BLOW BUILDING TO BOTTOM OF BUCKET IN 12 MINUTES

Final Blow 1" BLOW BUILDING TO BOTTOM OF BUCKET IN 15 MINUTES

Recovery - Total Feet 300 Flush Tool? NO

Rec. <u>180</u>	Feet of <u>GAS IN PIPE</u>
Rec. <u>180</u>	Feet of <u>GASSY MUD</u>
Rec. <u>120</u>	Feet of <u>GASSY MUDDY WATER</u>
Rec. _____	Feet of _____
Rec. _____	Feet of _____

BHT 76 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 0.155 @ 64 °F Chlorides 55000 ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 999.8 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 52.1 PSI @ (depth) 1986 w / Clock No. 26191

(C) First Final Flow Pressure 87.6 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 522.1 PSI @ (depth) 2082 w / Clock No. 14389

(E) Second Initial Flow Pressure 126.5 PSI AK1 Recorder No. _____ Range _____

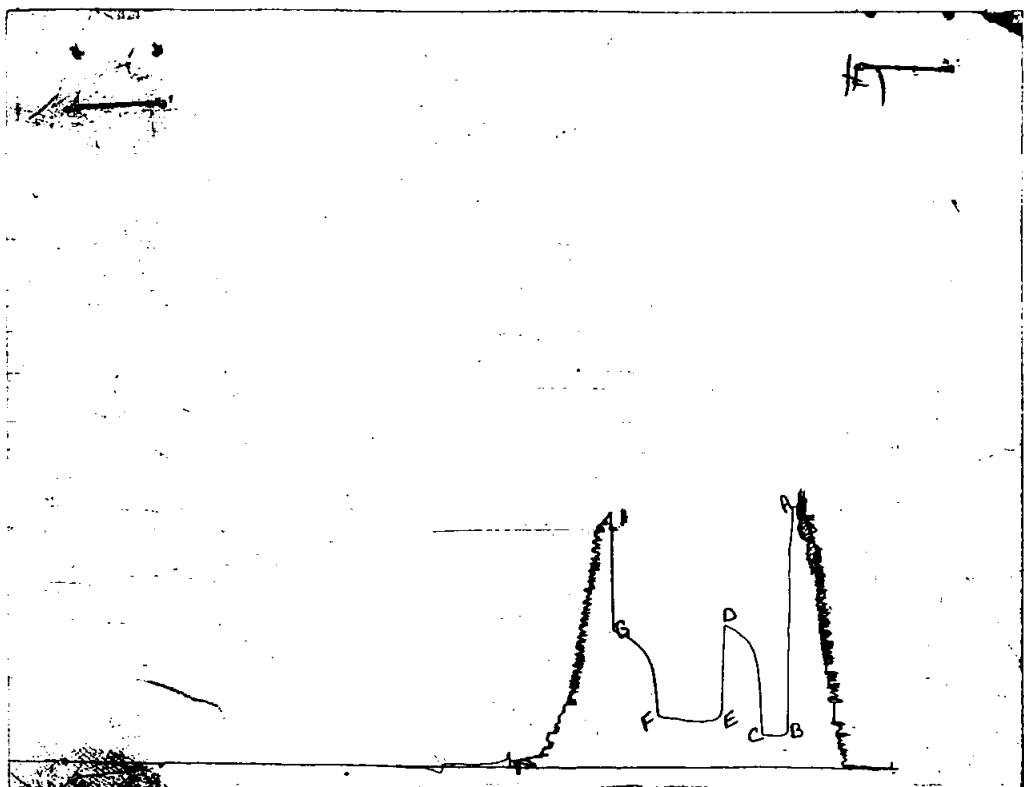
(F) Second Final Flow Pressure 164.3 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 493.2 PSI Initial Opening 15 Final Flow 45

(H) Final Hydrostatic Mud 984.3 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative PAUL SIMPSON

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	993	999.8
(B) FIRST INITIAL FLOW PRESSURE	48	52.1
(C) FIRST FINAL FLOW PRESSURE	86	87.6
(D) INITIAL CLOSED-IN PRESSURE	517	522.1
(E) SECOND INITIAL FLOW PRESSURE	125	126.5
(F) SECOND FINAL FLOW PRESSURE	163	164.3
(G) FINAL CLOSED-IN PRESSURE	489	493.2
(H) FINAL HYDROSTATIC MUD	983	984.3

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 6275

Well Name & No. <u>Kreutzer 'A' #1</u>	Test No. <u>1</u>	Date <u>11-21-93</u>
Company <u>A & G Energy Inc</u>	Zone Tested <u>Winfield</u>	
Address <u>P.O. Box 458 Hays, KS 67601</u>	Elevation <u>2053</u>	
Co. Rep./Geo. <u>Ed Glassman</u>	Cont. <u>Duke #4</u>	Est. Ft. of Pay _____
Location: Sec. <u>26</u>	Twp. <u>16s</u>	Rge. <u>16w</u> Co. <u>Rush</u> State <u>KS</u>
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>1980-2085</u>	Drill Pipe Size <u>4 1/2" AIT</u>
Anchor Length <u>105</u>	Top Choke — 1" Bottom Choke — 3/4"
Top Packer Depth <u>1975</u>	Hole Size — 7 7/8" Rubber Size — 6 3/4"
Bottom Packer Depth <u>1980</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>2085</u>	Drill Collar — 2.25 Ft. Run <u>121</u>
Mud Wt. <u>N/A</u> lb/gal.	Viscosity <u>N/A</u> Filtrate <u>N/A</u>
Tool Open @ <u>1:46 PM</u>	Initial Blow <u>1" blow building to bottom of bucket</u>
<u>in 12 minutes</u>	
Final Blow <u>1" blow building to bottom of bucket in 15 minutes</u>	

Recovery — Total Feet <u>305</u>	Feet of Gas in Pipe <u>180</u>	Flush Tool? _____
Rec. <u>180</u>	Feet Of <u>gassy mud</u>	%gas %oil %water %mud
Rec. <u>120</u>	Feet Of <u>gassy muddy water</u>	%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 <u>26</u> °F	Gravity _____	°API @ _____	°F Corrected Gravity _____	°API _____
RW <u>135</u> @ <u>64</u>	°F	Chlorides <u>55,000</u> ppm	Recovery _____	Chlorides _____ ppm System _____
(A) Initial Hydrostatic Mud <u>993</u>	PSI	Ak1 Recorder No. <u>22150</u>	Range <u>3925</u>	
(B) First Initial Flow Pressure <u>48</u>	PSI	@ (depth) <u>1986</u>	w/Clock No. <u>26191</u>	
(C) First Final Flow Pressure <u>86</u>	PSI	AK1 Recorder No. <u>24174</u>	Range <u>3050</u>	
(D) Initial Shut-In Pressure <u>517</u>	PSI	@ (depth) <u>2082</u>	w/Clock No. <u>14389</u>	
(E) Second Initial Flow Pressure <u>125</u>	PSI	AK1 Recorder No. _____	Range _____	
(F) Second Final Flow Pressure <u>163</u>	PSI	@ (depth) _____	w/Clock No. _____	
(G) Final Shut-In Pressure <u>489</u>	PSI	Initial Opening <u>15</u>	Test <u>600.00</u>	
(H) Final Hydrostatic Mud <u>983</u>	PSI	Initial Shut-In <u>30</u>	Jars _____	

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE 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.

Final Flow <u>45</u>	Safety Joint _____
Final Shut-In <u>30</u>	Straddle _____
	Circ. Sub _____
	Sampler _____
	Extra Packer _____
	Other _____

Approved By Ed Glassman
 Our Representative Paul Simpson

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name KREUTZER "A" #1 Test No. 2 Date 11/23/93
Company AFG ENERGY, INC. Zone TOPEKA
Address P.O. BOX 458 HAYS KANSAS 67601 Elevation 2053
Co. Rep./Geo. ED GLASSMAN Cont. DUKE DRLG RIG #4 Est. Ft. of Pay _____
Location: Sec. 26 Twp. 16S Rge. 16W Co. RUSH State KS

Interval Tested 3023-3060 Drill Pipe Size 4.5" XH
Anchor Length 37 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 3018 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 3023 Mud Wt. 8.4 lb/Gal.
Total Depth 3060 Viscosity 46 Filtrate 8.7

Tool Open @ 3:40 AM Initial Blow (SLID TOOL 8' WHEN OPENED) - STRONG BLOW BUILT TO
BOTTOM OF BUCKET IN 2.5 MIN/SURFACE BLOW BACK ON SHUTIN
Final Blow STRONG-OFF BOTTOM WHEN TOOL OPENED

Recovery - Total Feet 130 Flush Tool? NO

Rec. 1520 Feet of GAS IN PIPE
Rec. 130 Feet of THIN GASSY MUD WITH OIL SPECKS IN TOOL
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 95 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 1444.3 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 75.4 PSI @ (depth) 3028 w / Clock No. 14389

(C) First Final Flow Pressure 79.8 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 892.1 PSI @ (depth) 3054 w / Clock No. 26191

(E) Second Initial Flow Pressure 88.7 PSI AK1 Recorder No. _____ Range _____

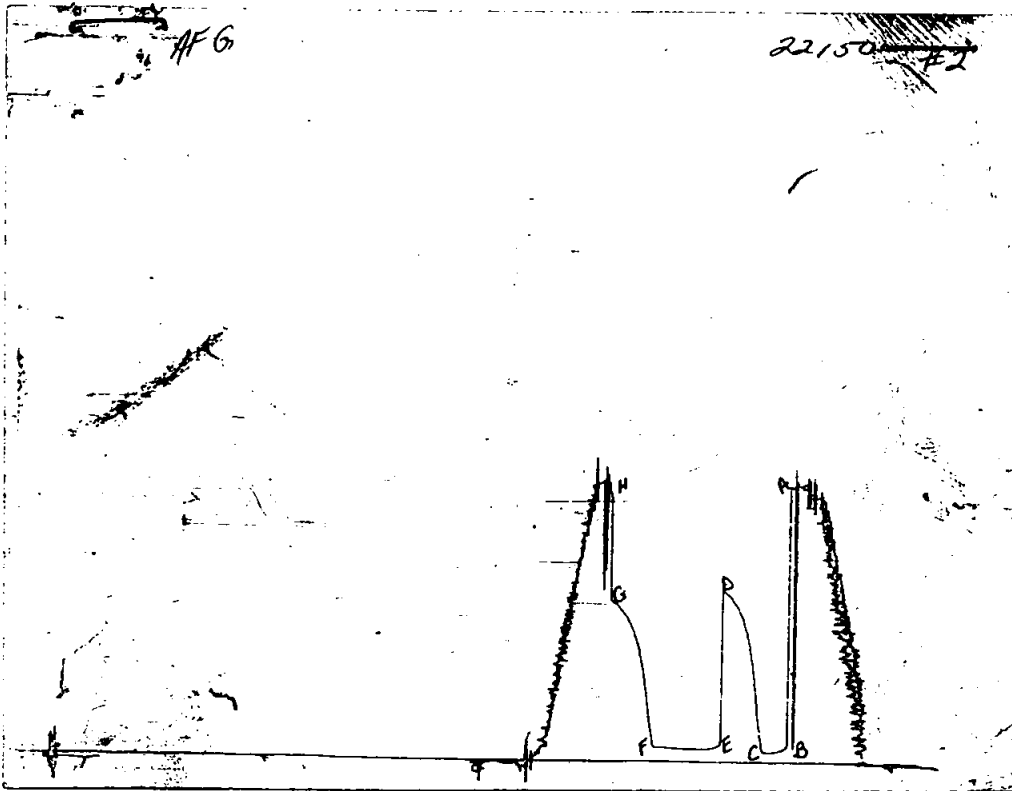
(F) Second Final Flow Pressure 106.5 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 843.2 PSI Initial Opening 15 Final Flow 45

(H) Final Hydrostatic Mud 1422.1 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative PAUL SIMPSON

CHART PAGE



This is an actual photograph of recorder chart

FIELD
READING

OFFICE
READING

(A) INITIAL HYDROSTATIC MUD	1439	1444.3
(B) FIRST INITIAL FLOW PRESSURE	74	75.4
(C) FIRST FINAL FLOW PRESSURE	74	79.8
(D) INITIAL CLOSED-IN PRESSURE	888	892.1
(E) SECOND INITIAL FLOW PRESSURE	82	88.7
(F) SECOND FINAL FLOW PRESSURE	97	106.5
(G) FINAL CLOSED-IN PRESSURE	835	843.2
(H) FINAL HYDROSTATIC MUD	1424	1422.1

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 6525

Well Name & No. <u>Kroutzer 'A' #1</u>	Test No. <u>2</u>	Date <u>11-23-93</u>
Company <u>AFG Energy Inc</u>	Zone Tested <u>Topok</u>	
Address _____	Elevation <u>2053</u>	
Co. Rep./Geo. <u>Eel Glassman</u>	Cont. <u>Duke #4</u>	Est. Ft. of Pay _____
Location: Sec. <u>26</u>	Twp. <u>16s</u>	Rge. <u>16w</u> Co. <u>Rush</u> State <u>KS</u>
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>3023-3060</u>	Drill Pipe Size <u>4 1/2 x 1 1/2</u>
Anchor Length <u>37</u>	Top Choke — 1" Bottom Choke — 3/4"
Top Packer Depth <u>3018</u>	Hole Size — 7 7/8" Rubber Size — 6 3/4"
Bottom Packer Depth <u>3023</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>3060</u>	Drill Collar — 2.25 Ft. Run _____
Mud Wt. <u>8.4</u> lb/gal.	Viscosity <u>46</u> Filtrate <u>8.7</u>
Tool Open @ <u>3:40 AM</u>	Initial Blow <u>(slid tool 8' in open) - strong blow</u>
Final Blow <u>strong - off bottom when tool opened</u>	<u>built to bottom of bucket in 2 1/2 minutes - (surface blow back on shut in)</u>

Recovery — Total Feet <u>130</u>	Feet of Gas in Pipe <u>1520</u>	Flush Tool? _____
Rec. <u>130</u> Feet Of <u>thingy mud</u>	%gas %oil %water %mud	
Rec. _____ Feet Of <u>oil seeps in tool</u>	%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 95 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud <u>1439</u>	PSI AK1 Recorder No. <u>22150</u>	Range <u>3925</u>
(B) First Initial Flow Pressure <u>24</u>	PSI @ (depth) <u>3028</u>	w/Clock No. <u>141389</u> f
(C) First Final Flow Pressure <u>74</u>	PSI AK1 Recorder No. <u>24174</u>	Range <u>3050</u>
(D) Initial Shut-In Pressure <u>888</u>	PSI @ (depth) <u>3054</u>	w/Clock No. <u>26191</u>
(E) Second Initial Flow Pressure <u>82</u>	PSI AK1 Recorder No. _____	Range _____
(F) Second Final Flow Pressure <u>97</u>	PSI @ (depth) _____	w/Clock No. _____
(G) Final Shut-In Pressure <u>835</u>	PSI Initial Opening <u>15</u>	Test _____
(H) Final Hydrostatic Mud <u>1424</u>	PSI Initial Shut-In <u>30</u>	Jars _____

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Final Flow <u>45</u>	Safety Joint _____
Final Shut-In <u>30</u>	Straddle _____
	Circ. Sub _____
	Sampler _____
	Extra Packer _____
	Other _____

Approved By E. Glassman

Our Representative Paul Simpson

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name KREUTZER "A" #1 Test No. 3 Date 11/24/93
Company AFG ENERGY, INC. Zone LKC-"A-C"
Address P.O. BOX 458 HAYS KANSAS 67601 Elevation 2053
Co. Rep./Geo. ED GLASSMAN Cont. DUKE DRLG RIG #4 Est. Ft. of Pay 4
Location: Sec. 26 Twp. 16S Rge. 16W Co. RUSH State KS

Interval Tested 3267-3359 Drill Pipe Size 4.5" XH
Anchor Length 92 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 3262 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 3267 Mud Wt. 9 lb/Gal.
Total Depth 3359 Viscosity 49 Filtrate 9.2

Tool Open @ 1:07 AM Initial Blow STRONG BLOW - OFF BOTTOM OF BUCKET IN 45 SECONDS

Final Blow STRONG-GAUGING GAS

Recovery - Total Feet 100 Flush Tool? NO

Rec. 100 Feet of GASSY MUD
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 1635.9 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 112.3 PSI @ (depth) 3326 w / Clock No. 26191

(C) First Final Flow Pressure 86.9 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 928.7 PSI @ (depth) 3352 w / Clock No. 30401

(E) Second Initial Flow Pressure 120.6 PSI AK1 Recorder No. _____ Range _____

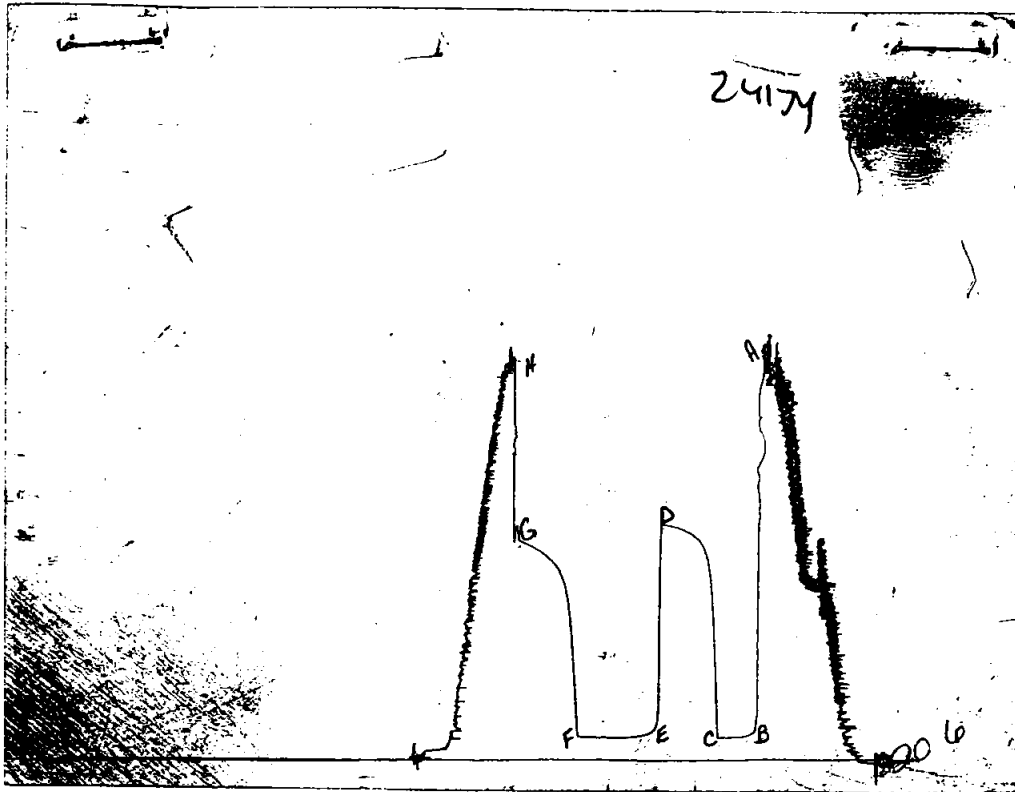
(F) Second Final Flow Pressure 92.8 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 864.3 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 1622.3 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative PAUL SIMPSON

CHART PAGE



This is an actual photograph of recorder chart

FIELD
READING

OFFICE
READING

(A) INITIAL HYDROSTATIC MUD	1628	1635.9
(B) FIRST INITIAL FLOW PRESSURE	83	112.3
(C) FIRST FINAL FLOW PRESSURE	74	86.9
(D) INITIAL CLOSED-IN PRESSURE	926	928.7
(E) SECOND INITIAL FLOW PRESSURE	83	120.6
(F) SECOND FINAL FLOW PRESSURE	74	92.8
(G) FINAL CLOSED-IN PRESSURE	850	864.3
(H) FINAL HYDROSTATIC MUD	1590	1622.3

INITIAL FLOW

RECORDER 24174

DST # 3

TIME(MIN) PRESSURE <> PRESSURE

TIME(MIN)	PRESSURE	<>	PRESSURE
0	112.3		112.3
3	100.3		-12.0
6	95.1		-5.2
9	91.3		-3.8
12	89.1		-2.2
15	88.4		-0.7
18	87.6		-0.8
21	87.6		0.0
24	87.6		0.0
27	86.9		-0.7
30	86.9		0.0

FINAL FLOW

RECORDER 24174

DST # 3

TIME(MIN) PRESSURE <> PRESSURE

TIME(MIN)	PRESSURE	<>	PRESSURE
0	120.6		120.6
6	99.6		-21.0
12	92.8		-6.8
18	89.1		-3.7
24	86.9		-2.2
30	85.4		-1.5
36	87.6		2.2
42	89.1		1.5
48	91.3		2.2
54	92.1		0.8
60	92.8		0.7

KREUTZER "A" #1
INITIAL

DST #3
SHUTIN

30 TOTAL FLOW TIME

Slope 93456.95 psi/cycle
P * 978 psi

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	606.1	1.041	606.1	11
	6	768.5	0.778	162.4	6
	9	818.7	0.637	50.2	4
	12	852.1	0.544	33.4	4
	15	871.1	0.477	19.0	3
	18	884.0	0.426	12.9	3
	21	894.6	0.385	10.6	2
X	24	899.9	0.352	5.3	2
	27	908.3	0.325	8.4	2
	30	913.6	0.301	5.3	2
	33	918.1	0.281	4.5	2
	36	922.7	0.263	4.6	2
	39	925.7	0.248	3.0	2
	42	926.5	0.234	0.8	2
X	45	928.7	0.222	2.2	2

KREUTZER "A" #1
FINAL

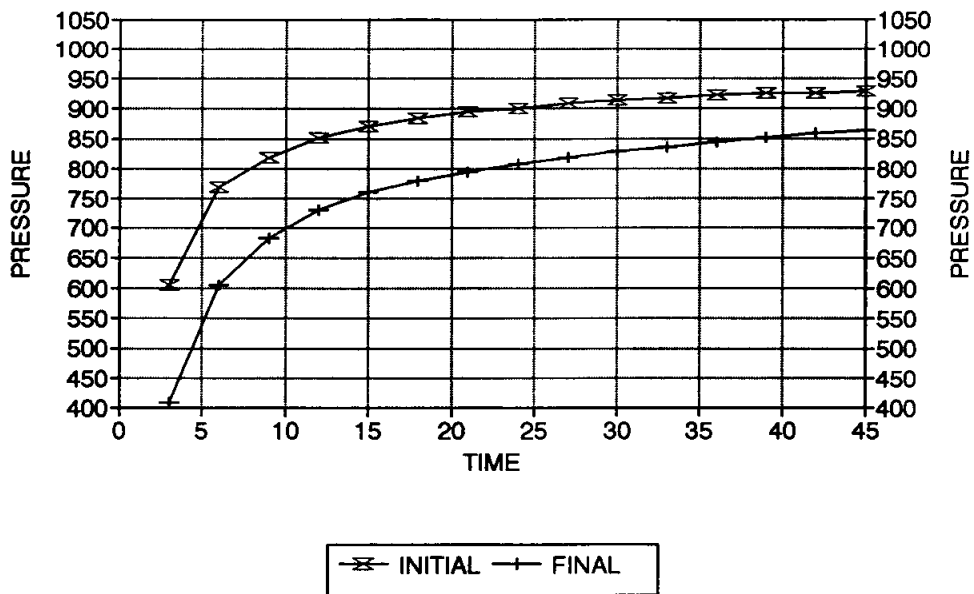
DST #3
SHUTIN

90 TOTAL FLOW TIME

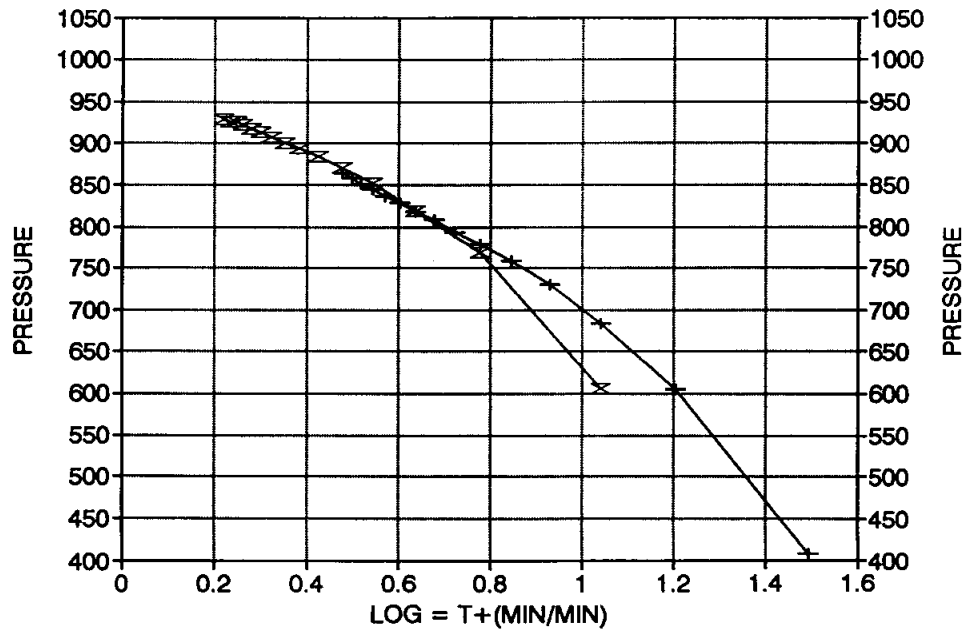
Slope 255854.90 psi/cycle
P * 1001 psi

		Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	408.2	1.491	408.2	31
	6	604.6	1.204	196.4	16
	9	683.9	1.041	79.3	11
	12	730.4	0.929	46.5	9
	15	759.4	0.845	29.0	7
	18	778.4	0.778	19.0	6
X	21	793.6	0.723	15.2	5
	24	808.0	0.677	14.4	5
	27	817.9	0.637	9.9	4
	30	828.6	0.602	10.7	4
	33	836.2	0.571	7.6	4
	36	845.3	0.544	9.1	4
	39	851.4	0.520	6.1	3
	42	858.2	0.497	6.8	3
X	45	864.3	0.477	6.1	3

KREUTZER "A" #1 DELTA T DELTA P



HORNER PLOT



GAS VOLUME REPORT

AFG ENERGY, INC.

KREUTZER "A" #1

DST # 3

MIN	INCHES OF WTR	ORIFICE	MCF/D	MIN	INCHES OF WTR	ORIFICE	MCF/D
6	10	1	81.6	5	40	1	163
10	11	1	85.9	10	30	1	141
20	11	1	85.9	15	15	1	101
30	10	1	81.6	20	12	1	89.8
				30	10	1	81.6
				40	8	1	73.1
				50	6	1	63.3
				60	6	1	63.3

Remarks: GAS WILL BURN

WELL NAME AFB7 / Kreuzer DST # 3 RECORDER # 24174

INIT. HYD. MUD.

FINAL HYD. MUD

INITIAL FLOW
MINUTES 30
INTERVAL

INITIAL SHUTIN
MINUTES 45
INTERVAL

FINAL FLOW
MINUTES 60
INTERVAL

FINAL SHUTIN
MINUTES 45
INTERVAL 3

.151	112.3	-	-	1	.1162	120.6	-	-
.125		.800		2	.124		.541	
.128		1.013		3	.125		.798	
.123		1.079		4	.120		.902	
.120		1.123		5	.117		.963	
.119		1.148		6	.115		1.001	
.118		1.165		7	.118		1.026	
"		1.179		8	.120		1.046	
"		1.186		9	.123		1.065	
117		1.197		10	.124		1.078	
.117	86.9	1.204		11	.125	92.8	1.092	
		1.210		12			1.102	
		1.216		13			1.114	
		1.220		14			1.122	
		1.221		15			1.131	
		1.224	928.7	16			1.139	864.3
				17				
				18				
				19				
				20				
				21				
				22				
				23				
				24				
				25				
				26				
				27				

1	0.8	606.14
2	1.013	768.5358
3	1.079	818.7345
4	1.123	852.1667
5	1.148	871.1416
6	1.165	884.0447
7	1.179	894.6708
8	1.186	899.9838
9	1.197	908.333
10	1.204	913.64
11	1.21	918.185
12	1.216	922.7299
13	1.22	925.7598
14	1.221	926.5172
15	1.224	928.7896

C5.9 - ~~907.12~~

F.S.D -

1	0.541	408.202
2	0.798	604.61
3	0.902	683.9831
4	0.963	730.4513
5	1.001	759.4104
6	1.026	778.4222
7	1.046	793.6332
8	1.065	808.085
9	1.078	817.9738
10	1.092	828.6239
11	1.102	836.228
12	1.114	845.3358
13	1.122	851.4078
14	1.131	858.2387
15	1.139	864.3107

FSI

C-16

A25... A39
D1... D30

AFG / Kreutz

IF

1	0.151	112.3696
2	0.135	100.3797
3	0.128	95.14018
4	0.123	91.39999
5	0.12	89.1568
6	0.119	88.40923
7	0.118	87.66173
8	0.118	87.66173
9	0.118	87.66173
10	0.117	86.91431
11	0.117	86.91431

FF

1	0.162	120.6202
2	0.134	99.63097
3	0.125	92.89583
4	0.12	89.1568
5	0.117	86.91431
6	0.115	85.4197
7	0.118	87.66173
8	0.12	89.1568
9	0.123	91.39999
10	0.124	92.14787
11	0.125	92.89583



GAS VOLUME REPORT

AFK

ME REPORT
Kreutzer 'A' #1

5

OPERATOR

WELL NAME AND NO.

DST NO.

Remarks:

Gas will burn

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 6526

Well Name & No. <u>Kretzer 'A' #1</u>	Test No. <u>3</u>	Date <u>11-24-93</u>
Company <u>A&E Energy</u>	Zone Tested <u>TAR-LKC A-B-C</u>	
Address _____	Elevation <u>2053</u>	<u>GL</u>
Co. Rep./Geol. <u>E & G Glassman</u>	Cont. <u>Duke #4</u>	Est. Ft. of Pay _____
Location: Sec. <u>20</u> Twp. <u>16s</u> Rge. <u>16</u> Co. _____ State _____		
No. of Copies _____ Distribution Sheet _____ Yes _____ No _____ Turnkey _____ Yes _____ No <u>X</u> Evaluation _____		

Interval Tested <u>3267-3359</u>	Drill Pipe Size <u>4 1/2 XH</u>
Anchor Length <u>92</u>	Top Choke — 1" _____ Bottom Choke — 3/4" _____
Top Packer Depth <u>3262</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>3267</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>3359</u>	Drill Collar — 2.25 Ft. Run _____
Mud Wt. <u>9.0</u> lb/gal.	Viscosity <u>49</u> Filtrate <u>9.2</u>
Tool Open @ <u>1:07 AM</u>	Initial Blow <u>strong blow - off bottom of bucket in 45 sec</u>
Final Blow <u>strong - gauging gas</u>	

Recovery — Total Feet <u>100</u>	Feet of Gas in Pipe _____	Flush Tool? _____
Rec. <u>100</u> Feet Of <u>gassy mud</u>	%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 _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System
(A) Initial Hydrostatic Mud <u>1628</u> PSI AK1 Recorder No. <u>22150</u> Range <u>3925</u>
(B) First Initial Flow Pressure <u>83</u> PSI @ (depth) <u>3326</u> w/Clock No. <u>26191</u>
(C) First Final Flow Pressure <u>74</u> PSI AK1 Recorder No. <u>24174</u> Range <u>3050</u>
(D) Initial Shut-In Pressure <u>926</u> PSI @ (depth) <u>3352</u> w/Clock No. <u>30401</u>
(E) Second Initial Flow Pressure <u>83</u> PSI AK1 Recorder No. _____ Range _____
(F) Second Final Flow Pressure <u>74</u> PSI @ (depth) _____ w/Clock No. _____
(G) Final Shut-In Pressure <u>850</u> PSI Initial Opening <u>30</u> Test _____
(H) Final Hydrostatic Mud <u>1590</u> PSI Initial Shut-In <u>45</u> Jars _____

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE 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.

Final Flow <u>60</u>	Safety Joint _____
Final Shut-In <u>45</u>	Straddle _____
	Circ. Sub _____
	Sampler _____

Approved By E Glassman

Our Representative Paul Simpson

Extra Packer _____

Other gas seal (partial)

TOTAL PRICE \$ 60000

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name KREUTZER "A" #1 Test No. 4 Date 11/24/93
Company AFG ENERGY, INC. Zone LKC
Address P.O. BOX 458 HAYS KANSAS 67601 Elevation 2053
Co. Rep./Geo. ED GLASSMAN Cont. DUKE DRLG RIG #4 Est. Ft. of Pay _____
Location: Sec. 26 Twp. 16S Rge. 16W Co. RUSH State KS

Interval Tested <u>3376-3420</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>44</u>	Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth <u>3371</u>	Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth <u>3376</u>	Mud Wt. <u>9.1</u> lb/Gal.
Total Depth <u>3420</u>	Viscosity <u>54</u> Filtrate <u>9.6</u>

Tool Open @ 2:23 PM Initial Blow 1/2" BLOW BUILDING TO BOTTOM OF BUCKET IN 26 MINUTES

Final Blow SURFACE BLOW BUILDING TO 3/4"

Recovery - Total Feet 270 Flush Tool? NO

Rec. <u>30</u>	Feet of <u>MUD</u>
Rec. <u>240</u>	Feet of <u>MUDDY WATER</u>
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____

BHT 105 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 0.15 @ _____ °F Chlorides 60000 ppm Recovery Chlorides 6000 ppm System

(A) Initial Hydrostatic Mud 1687.6 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 55.4 PSI @ (depth) 3382 w / Clock No. 30401

(C) First Final Flow Pressure 95.4 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 1003.2 PSI @ (depth) 3415 w / Clock No. 14389

(E) Second Initial Flow Pressure 133.2 PSI AK1 Recorder No. _____ Range _____

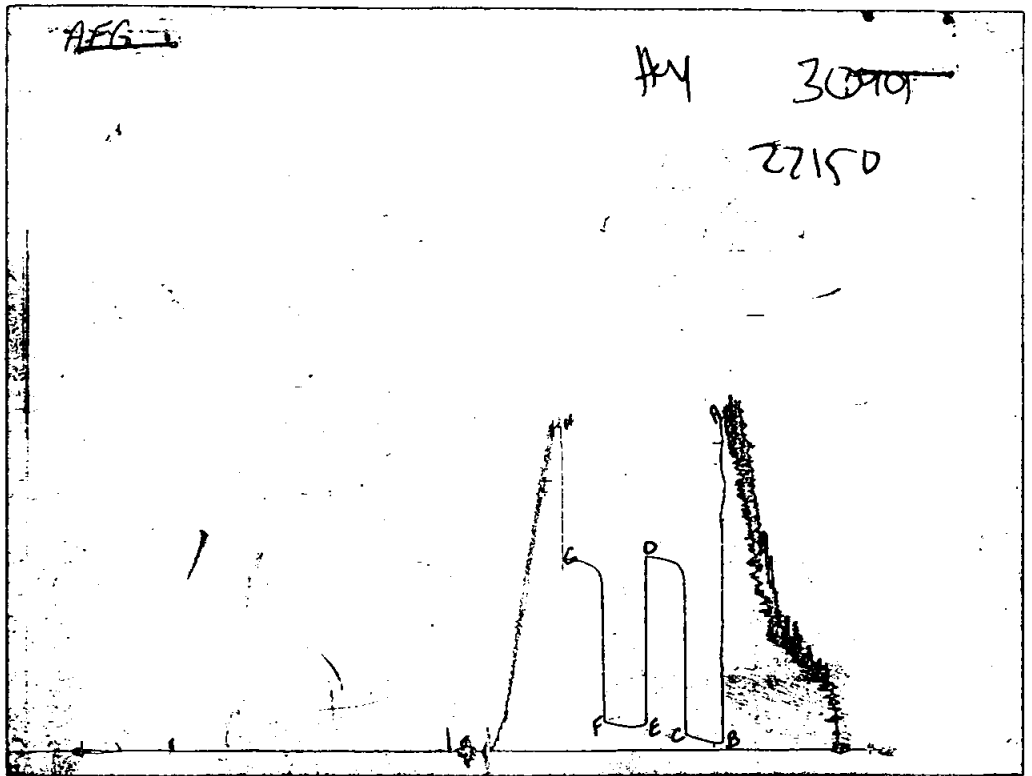
(F) Second Final Flow Pressure 164.3 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 988.7 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1655.4 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative PAUL SIMPSON

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1681	1687.6
(B) FIRST INITIAL FLOW PRESSURE	52	55.4
(C) FIRST FINAL FLOW PRESSURE	89	95.4
(D) INITIAL CLOSED-IN PRESSURE	1001	1003.2
(E) SECOND INITIAL FLOW PRESSURE	127	133.2
(F) SECOND FINAL FLOW PRESSURE	157	164.3
(G) FINAL CLOSED-IN PRESSURE	986	988.7
(H) FINAL HYDROSTATIC MUD	1651	1655.4

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 6527

Well Name & No. <u>Kretzer A #1</u>	Test No. <u>4</u>	Date <u>11-24-93</u>
Company <u>AGG Energy</u>	Zone Tested <u>LKC</u>	
Address _____	Elevation <u>2053 62</u>	
Co. Rep./Geo. <u>Ed Glassman</u>	Cont. <u>Duke #4</u>	Est. Ft. of Pay _____
Location: Sec. _____ Twp. _____ Rge. _____ Co. _____ State _____		
No. of Copies _____ Distribution Sheet _____ Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____		

Interval Tested <u>3376-3420</u>	Drill Pipe Size <u>4 1/2 XH</u>
Anchor Length <u>44</u>	Top Choke — 1" _____ Bottom Choke — 1/4" _____
Top Packer Depth <u>3371</u>	Hole Size — 77/8" _____ Rubber Size — 63/4" _____
Bottom Packer Depth <u>3376</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>3420</u>	Drill Collar — 2.25 Ft. Run _____
Mud Wt. <u>9.1</u> lb/gal.	Viscosity <u>54</u> Filtrate <u>9.6</u>
Tool Open @ <u>2:23 PM</u>	Initial Blow <u>1/2" blow building to bottom of bucket in 26 minutes</u>
Final Blow <u>Surface blow building to 3/4"</u>	

Recovery — Total Feet <u>270</u>	Feet of Gas in Pipe _____	Flush Tool? _____
Rec. <u>30</u> Feet Of <u>Mud</u>	%gas _____ %oil _____ %water _____ %mud _____	
Rec. <u>240</u> Feet Of <u>Muddy water</u>	%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 <u>105</u> °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW <u>.15</u> @ <u>60</u> °F Chlorides <u>60,000</u> ppm Recovery Chlorides <u>6000</u> ppm System
(A) Initial Hydrostatic Mud <u>1681</u> PSI AK1 Recorder No. <u>22150</u> Range <u>3925</u>
(B) First Initial Flow Pressure <u>52</u> PSI @ (depth) <u>3382</u> w/Clock No. <u>30401</u>
(C) First Final Flow Pressure <u>89</u> PSI AK1 Recorder No. <u>24174</u> Range <u>3050</u>
(D) Initial Shut-In Pressure <u>1001</u> PSI @ (depth) <u>3415</u> w/Clock No. <u>14389</u>
(E) Second Initial Flow Pressure <u>127</u> PSI AK1 Recorder No. _____ Range _____
(F) Second Final Flow Pressure <u>157</u> PSI @ (depth) _____ w/Clock No. _____
(G) Final Shut-In Pressure <u>986</u> PSI Initial Opening <u>30</u> Test <u>600.00</u>
(H) Final Hydrostatic Mud <u>1651</u> PSI Initial Shut-In <u>30</u> Jars _____

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Final Flow <u>30</u>	Safety Joint _____
Final Shut-In <u>30</u>	Straddle _____
	Circ. Sub _____
	Sampler _____
	Extra Packer _____
	Other _____

Approved By Ed Glassman

Our Representative Paul Simpson

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name KREUTZER "A" #1 Test No. 5 Date 11/25/93
Company AFG ENERGY, INC. Zone LKC-"H-K"
Address P.O. BOX 458 HAYS KANSAS 67601 Elevation 2053
Co. Rep./Geo. ED GLASSMAN Cont. DUKE DRLG RIG #4 Est. Ft. of Pay _____
Location: Sec. 26 Twp. 16S Rge. 16W Co. RUSH State KS

Interval Tested <u>3431-3550</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>119</u>	Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth <u>3426</u>	Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth <u>3431</u>	Mud Wt. <u>9.2</u> lb/Gal.
Total Depth <u>3550</u>	Viscosity <u>57</u> Filtrate <u>9.6</u>

Tool Open @ 10:50 AM Initial Blow WEAK 1/2" BLOW BUILDING TO 3/4"

Final Blow SURFACE BLOW DIED IN 16 MINUTES

Recovery - Total Feet 15 Flush Tool? NO

Rec. <u>15</u>	Feet of <u>MUD</u>
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 1768.7 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 64.3 PSI @ (depth) 3510 w / Clock No. 14389

(C) First Final Flow Pressure 71.0 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 164.3 PSI @ (depth) 3542 w / Clock No. 26191

(E) Second Initial Flow Pressure 72.1 PSI AK1 Recorder No. _____ Range _____

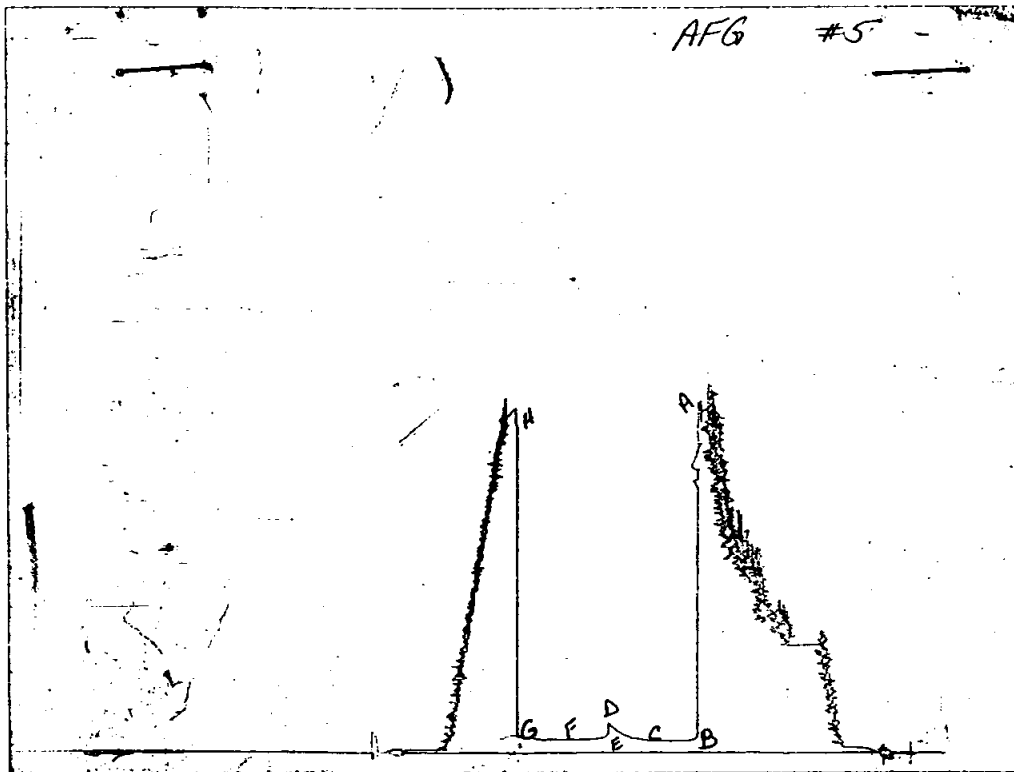
(F) Second Final Flow Pressure 72.1 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 134.3 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1733.2 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative PAUL SIMPSON

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1765	1768.7
(B) FIRST INITIAL FLOW PRESSURE	59	64.3
(C) FIRST FINAL FLOW PRESSURE	67	71
(D) INITIAL CLOSED-IN PRESSURE	157	164.3
(E) SECOND INITIAL FLOW PRESSURE	67	72.1
(F) SECOND FINAL FLOW PRESSURE	67	72.1
(G) FINAL CLOSED-IN PRESSURE	127	134.3
(H) FINAL HYDROSTATIC MUD	1727	1733.2

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 6528

Well Name & No. <u>Kruezer 'A' #1</u>	Test No. <u>5</u>	Date <u>11-25-93</u>
Company <u>AFC Energy</u>	Zone Tested <u>LKC H-K</u>	
Address _____	Elevation <u>2053 62</u>	
Co. Rep./Geo. <u>Ed Glassman</u>	cont. <u>Duke #4</u>	Est. Ft. of Pay _____
Location: Sec. <u>20</u>	Twp. <u>16s</u>	Rge. <u>16w</u>
	co. <u>Rail</u>	state <u>Ks</u>
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>3431-3550</u>	Drill Pipe Size <u>4 1/2 KH</u>
Anchor Length <u>119</u>	Top Choke — 1" _____ Bottom Choke — 3/4" _____
Top Packer Depth <u>3426</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>3431</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>3550</u>	Drill Collar — 2.25 Ft. Run _____
Mud Wt. <u>9.2</u> lb/gal.	Viscosity <u>52</u> Filtrate <u>9.6</u>
Tool Open @ <u>10:50 AM</u>	Initial Blow <u>Weak 1/2" blow building to 3/4"</u>

Final Blow surface blow - died in 16 minutes

Recovery — Total Feet <u>15</u>	Feet of Gas in Pipe _____	Flush Tool? _____
Rec. <u>15</u> Feet Of <u>mud</u>	%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 _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud <u>1765</u>	PSI AK1 Recorder No. <u>22150</u>	Range <u>3925</u>
(B) First Initial Flow Pressure <u>59</u>	PSI @ (depth) <u>3510</u>	w/Clock No. <u>14389</u>
(C) First Final Flow Pressure <u>67</u>	PSI AK1 Recorder No. <u>24174</u>	Range <u>3050</u>
(D) Initial Shut-In Pressure <u>157</u>	PSI @ (depth) <u>3042</u>	w/Clock No. <u>26191</u>
(E) Second Initial Flow Pressure <u>67</u>	PSI AK1 Recorder No. _____	Range _____
(F) Second Final Flow Pressure <u>67</u>	PSI @ (depth) _____	w/Clock No. _____
(G) Final Shut-In Pressure <u>127</u>	PSI Initial Opening <u>30</u>	Test <u>600.00</u>
(H) Final Hydrostatic Mud <u>1727</u>	PSI Initial Shut-In <u>30</u>	Jars _____

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Final Flow <u>30</u>	Safety Joint _____
Final Shut-In <u>30</u>	Straddle _____
	Circ. Sub _____
	Sampler _____
	Extra Packer _____
	Other _____

Approved By Ed Glassman
 Our Representative Paul Simpson

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name KREUTZER "A" #1 Test No. 6 Date 11/26/93
Company AFG ENERGY, INC. Zone GRANITE WASH
Address P.O. BOX 458 HAYS KANSAS 67601 Elevation 2053
Co. Rep./Geo. ED GLASSMAN Cont. DUKE DRLG RIG #4 Est. Ft. of Pay _____
Location: Sec. 26 Twp. 16S Rge. 16W Co. RUSH State KS

Interval Tested <u>3540-3595</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>55</u>	Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth <u>3535</u>	Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth <u>3540</u>	Mud Wt. <u>9.2</u> lb/Gal.
Total Depth <u>3595</u>	Viscosity <u>49</u> Filtrate <u>10.2</u>

Tool Open @ 12:55 AM Initial Blow 1" BLOW DECREASING TO 1/2"

Final Blow 1/2" BLOW DECREASING & DIED IN 20 MINUTES

Recovery - Total Feet 15 Flush Tool? NO

Rec. <u>15</u>	Feet of <u>MUD</u>
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____

BHT 102 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 1805.4 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 29.8 PSI @ (depth) 3544 w / Clock No. 14389

(C) First Final Flow Pressure 29.8 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 55.4 PSI @ (depth) 3594 w / Clock No. 30401

(E) Second Initial Flow Pressure 43.2 PSI AK1 Recorder No. _____ Range _____

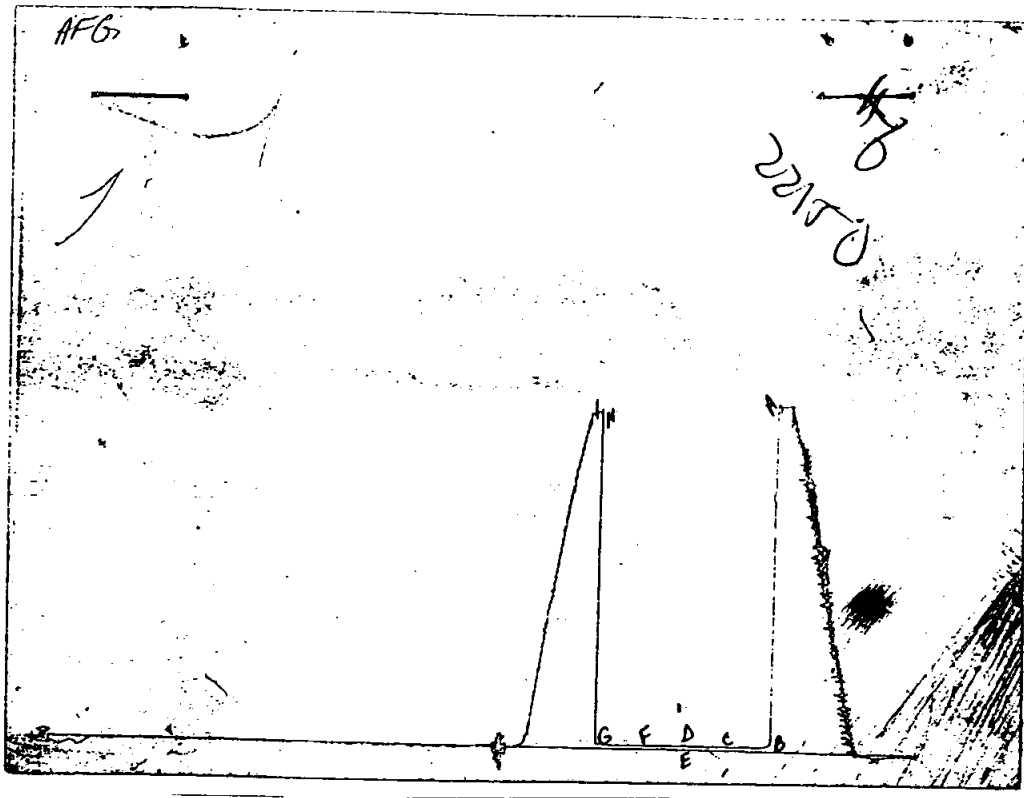
(F) Second Final Flow Pressure 43.2 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 55.4 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1744.3 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative PAUL SIMPSON

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1796	1805.4
(B) FIRST INITIAL FLOW PRESSURE	30	29.8
(C) FIRST FINAL FLOW PRESSURE	30	29.8
(D) INITIAL CLOSED-IN PRESSURE	52	55.4
(E) SECOND INITIAL FLOW PRESSURE	38	43.2
(F) SECOND FINAL FLOW PRESSURE	38	43.2
(G) FINAL CLOSED-IN PRESSURE	52	55.4
(H) FINAL HYDROSTATIC MUD	1742	1744.3

Test Ticket

No 6529

Well Name & No. <u>Keweenaw A #1</u>	Test No. <u>6</u>	Date <u>11-26-93</u>
Company <u>AFG Energy</u>	Zone Tested <u>Granite Wash</u>	
Address _____	Elevation <u>2053</u>	
Co. Rep./Geo. <u>Ed Glassman</u>	Cont. <u>Duke #4</u>	Est. Ft. of Pay _____
Location: Sec. <u>26</u> Twp. <u>16s</u> Rge. <u>16w</u> Co. <u>Rush</u> State <u>K</u>		
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>3540-3595</u>	Drill Pipe Size <u>4 1/2 XH</u>
Anchor Length <u>55</u>	Top Choke — 1" _____ Bottom Choke — 3/4" _____
Top Packer Depth <u>3535</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>3540</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>3595</u>	Drill Collar — 2.25 Ft. Run _____
Mud Wt. <u>9.2</u> lb/gal.	Viscosity <u>49</u> Filtrate <u>10.2</u>
Tool Open @ <u>12:55 AM</u> Initial Blow <u>1" blow decreasing to 1/2"</u>	
Final Blow <u>1/2" blow decreasing & died in 20 minutes</u>	

Recovery — Total Feet <u>15</u>	Feet of Gas in Pipe _____	Flush Tool? _____
Rec. <u>15</u> Feet Of <u>Mud</u>	%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 <u>102</u> °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System
(A) Initial Hydrostatic Mud <u>1796</u> PSI Ak1 Recorder No. <u>22150</u> Range <u>3925</u>
(B) First Initial Flow Pressure <u>30</u> PSI @ (depth) <u>3544</u> w/Clock No. <u>14389</u>
(C) First Final Flow Pressure <u>30</u> PSI AK1 Recorder No. <u>24174</u> Range <u>3050</u>
(D) Initial Shut-In Pressure <u>52</u> PSI @ (depth) <u>3594</u> w/Clock No. <u>30401</u>
(E) Second Initial Flow Pressure <u>38</u> PSI AK1 Recorder No. _____ Range _____
(F) Second Final Flow Pressure <u>38</u> PSI @ (depth) _____ w/Clock No. _____
(G) Final Shut-In Pressure <u>52</u> PSI Initial Opening <u>30</u> Test <u>600.00</u>
(H) Final Hydrostatic Mud <u>1742</u> PSI Initial Shut-In <u>30</u> Jars _____

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Approved By [Signature]
Our Representative Paul Simpson

Safety Joint _____
Straddle _____
Circ. Sub _____
Sampler _____
Extra Packer _____
Other _____
TOTAL PRICE \$ 600.00



WESTERN TESTING CO., INC.
FORMATION TESTING

CAST 125T

TICKET No 20120

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation _____ Formation PLATTSMOUTH Eff. Pay _____ Ft.

District GREAT BEND Date 11-26-93 Customer Order No. _____

COMPANY NAME APG ENERGY INC

ADDRESS P.O. BOX 458 HAYS KS 67601

LEASE AND WELL NO. KREUTZER COUNTY RUSH STATE KS Sec. 26 Twp. 16S Rge. 12W

Mail Invoice To SA #1 Co. Name SAME Address _____ No. Copies Requested 100

Mail Charts To _____ Address _____ No. Copies Requested "

Formation Test No. 7 Interval Tested From 3174 ft. to 3210 ft. Total Depth 3620 ft.

Packer Depth 3169 ft. Size 6 5/8 in. Packer Depth 3210 ft. Size 6 5/8 in.

Packer Depth 3174 ft. Size 6 5/8 in. Packer Depth _____ ft. Size _____ in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 3200 ft. Recorder Number 11018 Cap. 4425 PSI

Bottom Recorder Depth (Outside) 3207 ft. Recorder Number 11018 Cap. 4600 PSI

Below Straddle Recorder Depth 3607 ft. Recorder Number 13629 Cap. 4425 PSI

Drilling Contractor DUKE DRILLING R164 Drill Collar Length 0 I. D. _____ in.

Mud Type CHEMICAL Viscosity 47 Weight Pipe Length 0 I. D. _____ in.

Weight 9.3 Water Loss 10.4 cc. Drill Pipe Length 3154 I. D. 3.8 in.

Chlorides 10,000 PPM P.P.M. Test Tool Length 20 ft. Tool Size 5 1/2 in.

Jars: Make WOTRAN Serial Number _____ Anchor Length 36 ft. Size 5 1/2 in.

Did Well Flow? NO Reversed Out _____ Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 2 7/8 in. Tool Joint Size 42XH in.

Blow: 1ST FLOW: STRONG BLOW B.O.B IN 7 MINUTES THEN DECREASED TO 7" BY END

2ND FLOW: STRONG BLOW B.O.B IN 3 MINUTES THEN DECREASED TO 1" BY END

Recovered 330 ft. of DRILLING MUD

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Chlorides 12,000 P.P.M. Sample Jars used _____ Remarks: _____

Time On Location 9:00 AM Time Pick Up Tool 9:30 AM Time Off Location 7:00 AM

Time Set Packer(s) 10:20 AM Time Started Off Bottom 1:20 AM Maximum Temperature 103°

Initial Hydrostatic Pressure _____ (A) 1560 P.S.I.

Initial Flow Period _____ Minutes 15 (B) 66 P.S.I. to (C) 87 P.S.I.

Initial Closed In Period _____ Minutes 30 (D) 1120 P.S.I.

Final Flow Period _____ Minutes 45 (E) 167 P.S.I. to (F) 200 P.S.I.

Final Closed In Period _____ Minutes 30 (G) 865 P.S.I.

Final Hydrostatic Pressure _____ (H) 1526 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to 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, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By Ed Glassman Signature of Customer or his authorized representative

Western Representative John Rust

FIELD INVOICE

Open Hole Test \$ ✓
Misrun \$ _____
Straddle Test \$ ✓
Jars \$ _____
Selective Zone \$ _____
Safety Joint \$ _____
Standby \$ _____
Evaluation \$ _____
Extra Packer \$ ✓
Circ. Sub. \$ _____
Mileage \$ _____
Fluid Sampler \$ _____
Extra Charts \$ _____
Insurance \$ _____
Telecopier \$ _____
TOTAL \$ _____

WESTERN TESTING CO., INC.

Pressure Data

Date 11-26-93

Test Ticker No. 20120

Recorder No. 11018

Capacity _____ Location _____ Ft

Clock No. _____ Elevation _____ Well Temperature _____ °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1575</u> P.S.I.	Open Tool	M
B First Initial Flow Pressure	<u>85</u> P.S.I.	First Flow Pressure	<u>15</u> Mins. <u>15</u> Mins.
C First Final Flow Pressure	<u>98</u> P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins. <u>33</u> Mins.
D Initial Closed-in Pressure	<u>1131</u> P.S.I.	Second Flow Pressure	<u>45</u> Mins. <u>45</u> Mins.
E Second Initial Flow Pressure	<u>184</u> P.S.I.	Final Closed-in Pressure	<u>30</u> Mins. <u>33</u> Mins.
F Second Final Flow Pressure	<u>222</u> P.S.I.		
G Final Closed-in Pressure	<u>882</u> P.S.I.		
H Final Hydrostatic Mud	<u>1529</u> P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
B P 1 0	<u>85</u>	C 0	<u>98</u>	E 0	<u>184</u>	F 0	<u>222</u>
P 2 5	<u>118</u>	3	<u>817</u>	5	<u>227</u>	3	<u>478</u>
P 3 10	<u>104</u>	6	<u>847</u>	10	<u>222</u>	6	<u>553</u>
C P 4 15	<u>98</u>	9	<u>932</u>	15		9	<u>626</u>
P 5 20		12	<u>991</u>	20		12	<u>677</u>
P 6 25		15	<u>1027</u>	25		15	<u>730</u>
P 7 30		18	<u>1051</u>	30		18	<u>766</u>
P 8 35		21	<u>1079</u>	35		21	<u>795</u>
P 9 40		24	<u>1099</u>	40		24	<u>827</u>
P10 45		27	<u>1111</u>	F 45	<u>222</u>	27	<u>850</u>
P11 50		30	<u>1119</u>	50		30	<u>870</u>
P12 55		D 33	<u>1131</u>	55		G 33	<u>882</u>
P13 60		36		60		36	
P14 65		39		65		39	
P15 70		42		70		42	
P16 75		45		75		45	
P17 80		48		80		48	
P18 85		51		85		51	
P19 90		54		90		54	
P20 95		57		95		57	
100		60		100		60	