

Computer Inventoried

**CONFIDENTIAL**  
WELL NAME:  
COMPANY:  
KCC LOCATION:

MAR 17 2000

**CONFIDENTIAL**

DATE:

Graeff #2  
Mull Drilling Co.  
9-17-28  
Lane co KS  
3/3/00

**ORIGINAL RECEIVED**  
STATE CORPORATION COMMISSION

MAR 21 2000

CONSERVATION DIVISION  
Wichita, Kansas

**RELEASED**

MAY 08 2001

FROM CONFID.

**CONFIDENTIAL**

TRILOBITE TESTING L.L.C.

**ORIGINAL**

OPERATOR : Mull Drilling Co., Inc.

DATE 2-20-00

WELL NAME: Graeff #2

KB 2774.00 ft

TICKET NO: 12671 DST #1

LOCATION : 9-17s-28w Lane co KS

GR 2766.00 ft

FORMATION: Lansing "H"

INTERVAL : 4130.00 To 4160.00 ft

TD 4160.00 ft

TEST TYPE: CONVENTIONAL

**RECORDER DATA**

Mins		Field	1	2	3	4	TIME DATA-----
PF 10	Rec.	11085	11085	3027			PF Fr. 0228 to 0238 hr
SI 60	Range (Psi )	4300.0	4300.0	4995.0	0.0	0.0	IS Fr. 0238 to 0338 hr
SF 40	Clock (hrs)	12hr	12hr	elec			SF Fr. 0338 to 0418 hr
FS 120	Depth(ft )	4137.0	4137.0	4133.0	0.0	0.0	FS Fr. 0418 to 0618 hr

	Field	1	2	3	4	
A. Init Hydro	2015.0	2020.0	1977.0	0.0	0.0	T STARTED 0041 hr
B. First Flow	77.0	105.0	17.0	0.0	0.0	T ON BOTM 0225 hr
B1. Final Flow	77.0	106.0	33.0	0.0	0.0	T OPEN 0228 hr
C. In Shut-in	626.0	626.0	636.0	0.0	0.0	T PULLED 0618 hr
D. Init Flow	110.0	113.0	32.0	0.0	0.0	T OUT 0802 hr
E. Final Flow	110.0	113.0	54.0	0.0	0.0	
F. Fl Shut-in	429.0	435.0	436.0	0.0	0.0	<b>TOOL DATA-----</b>
G. Final Hydro	1993.0	1984.0	1971.0	0.0	0.0	Tool Wt. 2000.00 lbs
Inside/Outside	o	o	i			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 55000.00 lbs
						Initial Str Wt 40000.00 lbs
						Unseated Str Wt 41000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.78 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 30.00 ft
						D.P. Length 4101.00 ft

**RECOVERY**

Tot Fluid 90.00 ft of 30.00 ft in DC and 60.00 ft in DP  
 90.00 ft of Gas in pipe  
 90.00 ft of Muddy oil  
 0.00 ft of 55% oil 45% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

**KCC**

MAR 17 2000

**CONFIDENTIAL**

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

**BLOW DESCRIPTION**

Initial Flow:  
 Weak blow throughout. 1/4" to 1/2" blow.  
 Final Flow:  
 Weak blow throughout. 1/2" to 2" blow.

**MUD DATA-----**

Mud Type Chemical  
 Weight 9.30 lb/c  
 Vis. 50.00 S/L  
 W.L. 10.00 in3  
 F.C. 0.00 in  
 Mud Drop

Amt. of fill 0.00 ft  
 Btm. H. Temp. 111.00 F  
 Hole Condition good  
 % Porosity 0.00  
 Packer Size 6.75 in  
 No. of Packers 2  
 Cushion Amt. 0.00  
 Cushion Type  
 Reversed Out N  
 Tool Chased N  
 Tester Ray Schwager  
 Co. Rep. Kim Shoemaker  
 Contr. Discovery Drlg.  
 Rig # 1  
 Unit #  
 Pump T.

**RELEASED**

**MAY 08 2001**

**FROM CONFIDENTIAL**

SAMPLES:  
SENT TO:

Test Successful: Y

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

CONFIDENTIAL

WELL NAME: Graeff #2

LOCATION : 9-17s-28w Lane co KS

TICKET No. 12671 D.S.T. No. 1 DATE 2-20-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 20

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 30

TOTAL TOOL ..... 50

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY .....

D.C. ABOVE TOOLS.Stands Single 1 Total 30

D.P. ABOVE TOOLS.Stands67 Single Total 4101

TOTAL DRILL COLLARS DRILL PIPE & TOOLS... 4181

TOTAL DEPTH ..... 4160

TOTAL DRILL PIPE ABOVE K.B. .... 21

REMARKS:

P.O. SUB	3986
C.O. SUB	4106
S.I. TOOL	4111
HMV	4116
JARS	
SAFETY JOINT	4121
PACKER	4125
PACKER	4130
DEPTH	4131
ANCHOR 5'perf	4136
5' "	4141
5' "	4146
5' "	4151
Alpine@4133	
Ak-1 @4137	
5'perf	4156
1' "	4157
BULLNOSE 3'bullplug	4160
T.D.	4160

RELEASED  
MAY 08 2001  
FROM CONFIDENTIAL

Operator.....: Mull Drilling Co.  
Well Name.....: Graeff #2  
DST Number.....: 1

Location.: 9-17s-28w Lane co KS      Recorder No...: 3027  
Test Type: conv                      Recorder Depth: 4133  
Formation: Lansing "H"              Test Interval.: 4130-4160

RESERVOIR CALCULATIONS: Fluid calculations based on shut-in #2

RESERVOIR PARAMETERS USED:

Net Pay.....: 4.00 ft  
Porosity.....: 12.00 %  
Bottom Hole Temp.....: 111.00 F  
Specific Gravity.....: 0.028  
API Gravity.....: 38.00  
Compressibility.....: 0.000007 /psi  
Viscosity.....: 4.4290 cp  
Total Recovery.....: 180.00 ft  
Total Flowing Time.....: 50.00 min.  
Flow Rate.....: 15.90 bbls/d  
Final Flowing Pressure.....: 54.22 psi  
Horner Slope.....: 26.8476 psi/cycle  
Extrapolated Pressure.....: 412.25 psi  
Formation Volume Factor....: 1.05 Reservoir/Surface  
Well Bore Radius.....: 3.94 in

RESULTS:

Effective Permeability.....: 112.055344 md  
Flow Capacity.....: 448.2214 md.ft  
Transmissibility.....: 101.2015 md.ft/cp  
Skin Factor.....: 9.8495  
Radius of Investigation.....: 148.50559 ft  
Damage Ratio.....: 2.7909  
Productivity Index.....: 0.0444 bbls/psi.d  
Productivity Index W/O Damage.: 0.1240 bbls/psi.d

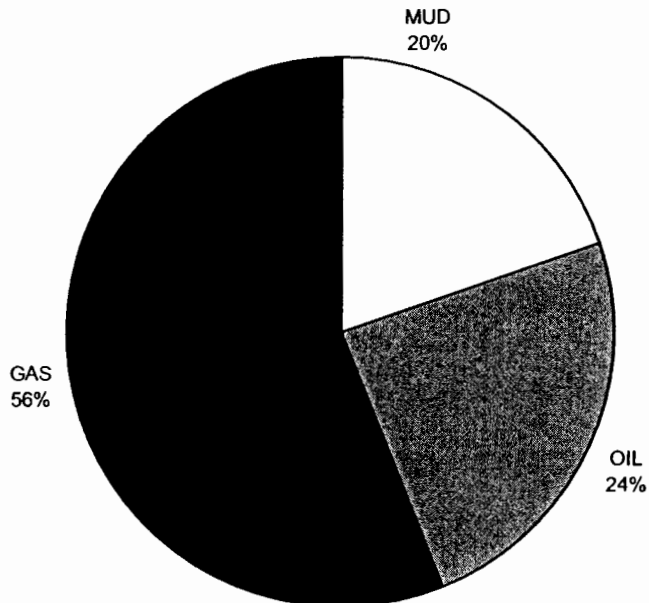
CALCULATED RECOVERY ANALYSIS

DST 1

TICKET 12671

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL	1	90	100	90	0	0	0	0	0	0
PIPE	2	60	0	0	55	33	0	0	45	27
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
PIPE	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
DRILL	1	30	0	0	55	16.5	0	0	45	13.5
COLLARS	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
TOTAL		180	0	90	0	49.5	0	0	0	40.5

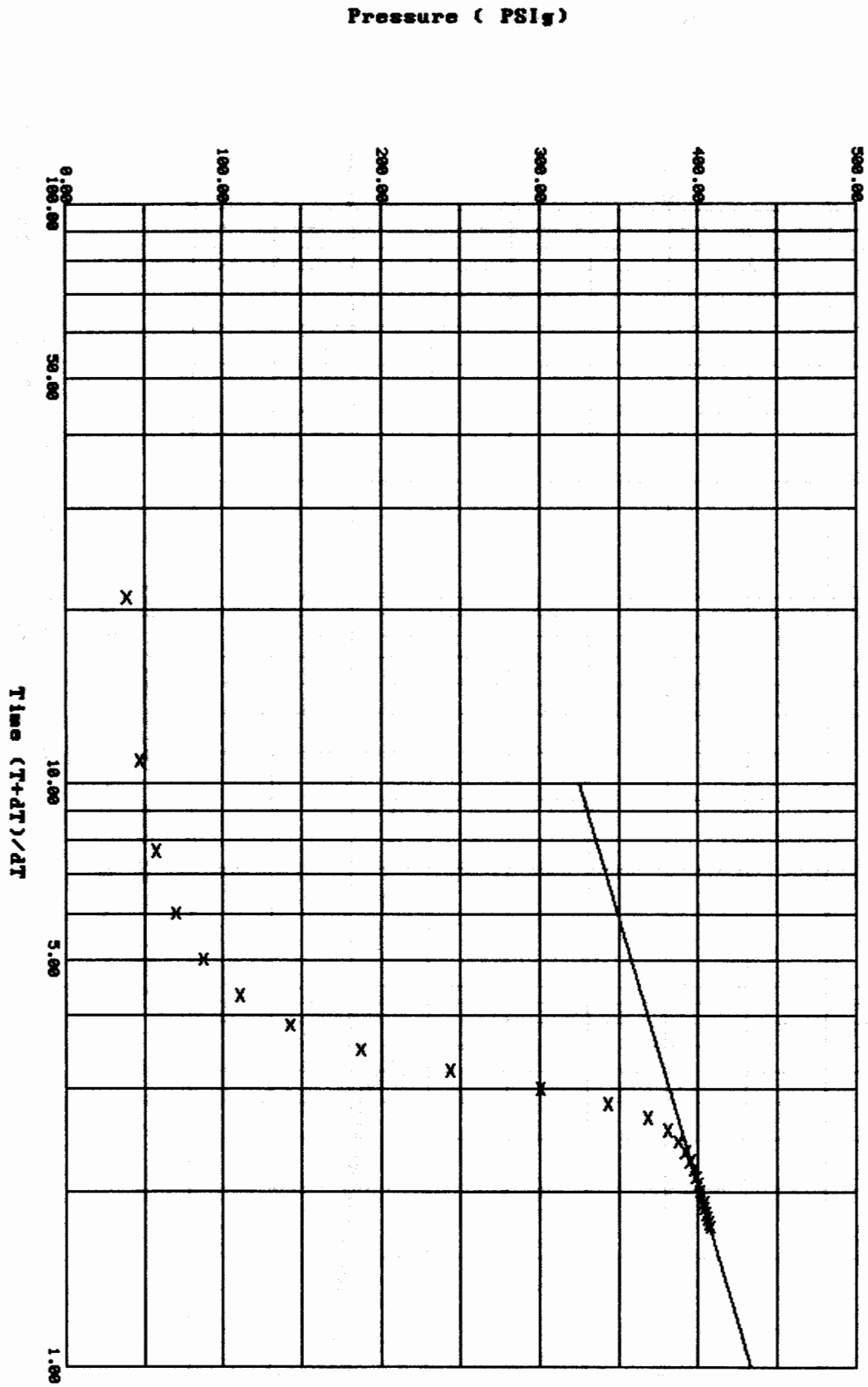
BBL OIL= 0.549945 \* HRS OPEN 0.83 = BBL/DAY 15.902024  
 BBL WATER= 0 \* = 0  
 BBL MUD= 0.449955  
 BBL GAS = 1.2798



# Horner Plot: Shut-in #1

12671 DST#1 Graeff #2 Mulli Drilling Company, Inc.

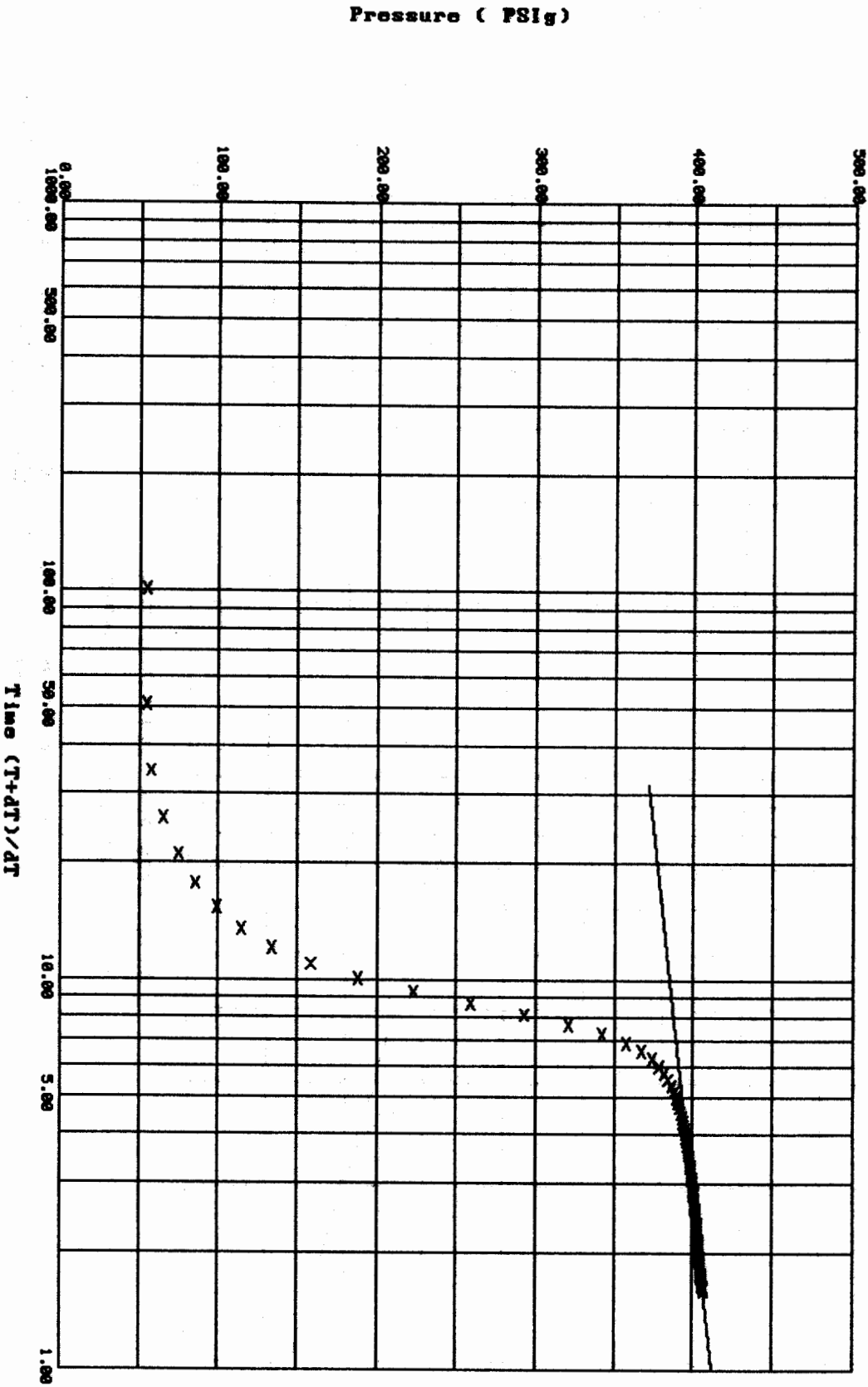
Slope: 108.9533 PSig/cycle  
 Ext. Pressure: 434.0017 PSig



# Horner Plot: Shut-in #2

12671 DST#1 Graeff #2 Null Drilling Company, Inc.

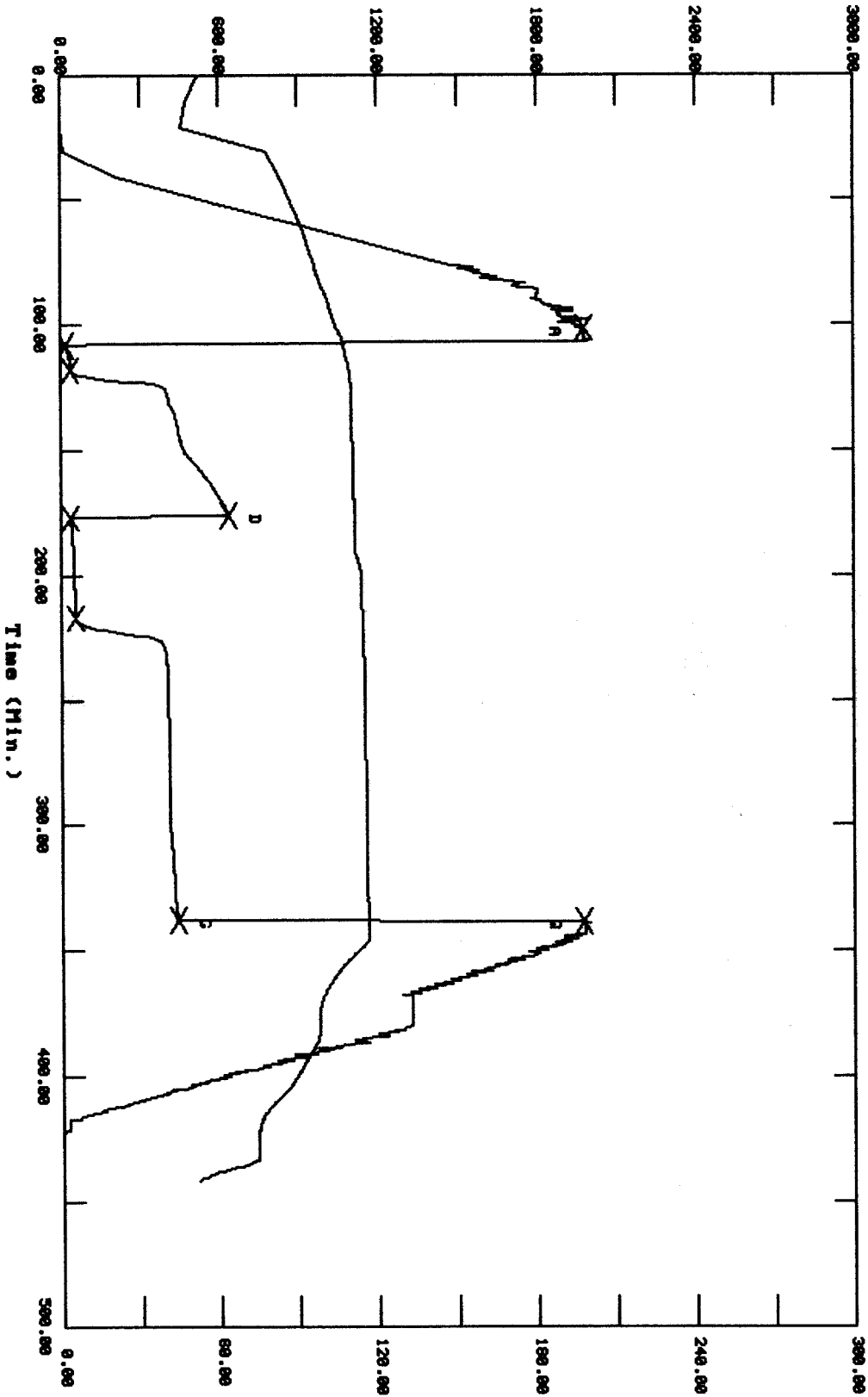
Slope: 26.8476 PSig/cycle  
 Ext. Pressure: 412.2492 PSig



# TEST HISTORY

Flag Points

	(Min.)	(K PSig)
R1	0.00	1977.39
B1	0.00	17.85
C1	10.00	33.13
D1	50.00	836.93
E1	0.00	32.65
F1	40.00	54.22
G1	121.00	438.60
H1	0.00	1971.45

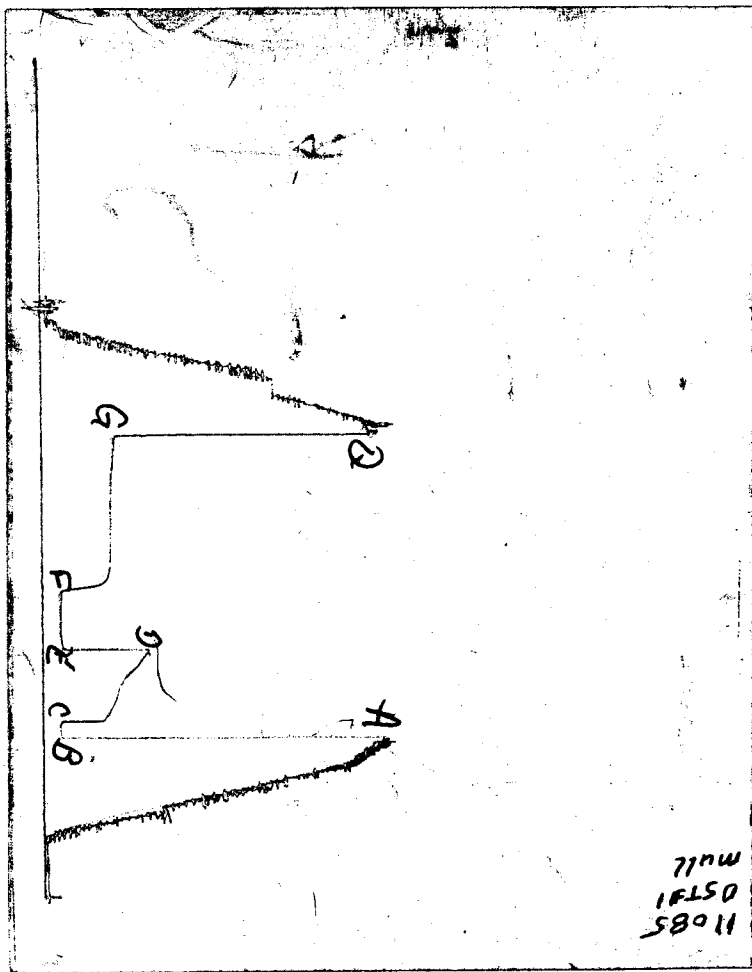


Pressure ( PSig )

Temperature ( DEG F )

Time (Min.)

CHART PAGE



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

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

Nº 12671

Well Name & No. <u>Graeff #2</u>	Test No. <u>1</u>	Date <u>2-20-00</u>
Company <u>Mull Drilling Company, Inc.</u>	Zone Tested <u>LANSING "H"</u>	
Address <u>P.O. Box 2758 Wichita, KS 67201-2758</u>	Elevation <u>2774</u> KB <u>2766</u> GL	
Co. Rep / Geo. <u>Kim Shoemaker</u>	Cont. <u>Discovery rig 1</u>	Est. Ft. of Pay <u>    </u> Por. <u>    </u> %
Location: Sec. <u>9</u>	Twp. <u>17<sup>s</sup></u>	Rge. <u>28<sup>w</sup></u>
	Co. <u>LANE</u>	State <u>Ks.</u>
No. of Copies <u>Req</u>	Distribution Sheet (Y, N) <u>    </u>	Turnkey (Y, N) <u>    </u>
		Evaluation (Y, N) <u>    </u>

Interval Tested <u>4130-4160</u>	Initial Str Wt/Lbs. <u>40000</u>	Unseated Str Wt/Lbs. <u>41000</u>
Anchor Length <u>30</u>	Wt. Set Lbs. <u>20000</u>	Wt. Pulled Loose/Lbs. <u>55000</u>
Top Packer Depth <u>4125</u>	Tool Weight <u>2000</u>	
Bottom Packer Depth <u>4130</u>	Hole Size — 7 7/8" <u>yes</u>	Rubber Size — 6 3/4" <u>yes</u>
Total Depth <u>4160</u>	Wt. Pipe Run <u>    </u>	Drill Collar Run <u>30</u>
Mud Wt. <u>9.3</u> LCM- <u>    </u> Vis. <u>50</u> WL <u>10</u>	Drill Pipe Size <u>4 1/2 XH</u>	Ft. Run <u>4101</u>
Blow Description <u>JEP - WEAK Blow throughout 1/4" to 1/2" Blow</u>		
<u>FFP - WEAK Blow throughout 1/2" to 2" Blow</u>		

Recovery — Total Feet <u>90</u>	GIP <u>90</u>	Ft. in DC <u>30</u>	Ft. in DP <u>60</u>
Rec. <u>90</u>	Feet Of <u>MD</u>	%gas <u>55</u> %oil	%water <u>45</u> %mud
Rec. <u>    </u>	Feet Of <u>    </u>	%gas <u>    </u> %oil	%water <u>    </u> %mud
Rec. <u>    </u>	Feet Of <u>    </u>	%gas <u>    </u> %oil	%water <u>    </u> %mud
Rec. <u>    </u>	Feet Of <u>    </u>	%gas <u>    </u> %oil	%water <u>    </u> %mud
Rec. <u>    </u>	Feet Of <u>    </u>	%gas <u>    </u> %oil	%water <u>    </u> %mud
BHT <u>111</u>	°F Gravity <u>    </u>	*API D <sub>60</sub> <u>    </u>	°F Corrected Gravity <u>    </u>
RW <u>    </u>	°F Chlorides <u>    </u>	ppm Recovery <u>    </u>	Chlorides <u>1400</u> ppm System

	AK-1	Alpine	PSI Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>2015</u>	<u>1977</u>	<u>3027</u>	<u>2330</u>
(B) First Initial Flow Pressure	<u>77</u>	<u>17</u>	(depth) <u>4133</u>	T-Started <u>0041</u>
(C) First Final Flow Pressure	<u>77</u>	<u>33</u>	PSI Recorder No. <u>11085</u>	T-Open <u>0228</u>
(D) Initial Shut-In Pressure	<u>626</u>	<u>636</u>	PSI (depth) <u>4137</u>	T-Pulled <u>0618</u>
(E) Second Initial Flow Pressure	<u>110</u>	<u>32</u>	PSI Recorder No. <u>    </u>	T-Out <u>0802</u>
(F) Second Final Flow Pressure	<u>110</u>	<u>54</u>	PSI (depth) <u>    </u>	T-Off Location <u>0830</u>
(G) Final Shut-in Pressure	<u>429</u>	<u>436</u>	PSI Initial Opening <u>10</u>	Test <u>700</u>
(Q) Final Hydrostatic Mud	<u>1993</u>	<u>1971</u>	PSI Initial Shut-in <u>60</u>	Jars <u>    </u>

Final Flow <u>40</u>	Safety Joint <u>50</u>
Final Shut-in <u>120</u>	Straddle <u>    </u>
	Circ. Sub <u>    </u>
	Sampler <u>    </u>
	Extra Packer <u>    </u>
	Elec. Rec. <u>150</u>
	Mileage <u>    </u>
	Other <u>    </u>
	TOTAL PRICE \$ <u>900</u>

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.

Approved By [Signature]  
 Our Representative Ray Schwager Thank you

TRILOBITE TESTING L.L.C.

OPERATOR : Mull Drilling Co., Inc.  
 WELL NAME: Graeff #2  
 LOCATION : 9-17s-28w Lane co KS  
 INTERVAL : 4162.00 To 4192.00 ft

DATE 2-21-00

KB 2774.00 ft TICKET NO: 12672 DST #2  
 GR 2766.00 ft FORMATION: Lansing "I"zone  
 TD 4192.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	11085	11085	3027			PF Fr. 1626 to 1656 hr
SI 30 Range (Psi )	4300.0	4300.0	4995.0	0.0	0.0	IS Fr. 1656 to 1726 hr
SF 30 Clock (hrs)	12hr	12hr	elec			SF Fr. 1726 to 1756 hr
FS 30 Depth (ft )	4169.0	4169.0	4165.0	0.0	0.0	FS Fr. 1756 to 1826 hr

	Field	1	2	3	4	
A. Init Hydro	2015.0	2011.0	2009.0	0.0	0.0	T STARTED 1436 hr
B. First Flow	77.0	92.0	17.0	0.0	0.0	T ON BOTM 1623 hr
B1. Final Flow	77.0	85.0	21.0	0.0	0.0	T OPEN 1626 hr
C. In Shut-in	77.0	85.0	70.0	0.0	0.0	T PULLED 1826 hr
D. Init Flow	77.0	85.0	3.0	0.0	0.0	T OUT 2011 hr
E. Final Flow	77.0	89.0	24.0	0.0	0.0	
F. Fl Shut-in	77.0	92.0	43.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	1993.0	1988.0	1981.0	0.0	0.0	Tool Wt. 2000.00 lbs
Inside/Outside	o	o	i			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 50000.00 lbs
						Initial Str Wt 40000.00 lbs
						Unseated Str Wt 40000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.78 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 30.00 ft
						D.P. Length 4130.00 ft

RECOVERY

Tot Fluid 11.00 ft of 11.00 ft in DC and 0.00 ft in DP  
 1.00 ft of Clean oil  
 10.00 ft of Slightly oil cut mud.  
 0.00 ft of 3% oil 97% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

Initial Flow:  
 Weak surface blow died in 9 minutes.  
 Final Flow:  
 No blow.

SAMPLES:  
 SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/c.
Vis.	48.00 S/L
W.L.	8.40 in3
F.C.	0.00 in
Mud Drop	

Amt. of fill	0.00 ft
Btm. H. Temp.	110.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Ray Schwager
Co. Rep.	Kim Shoemaker
Contr.	Discovery Drlg.
Rig #	1
Unit #	
Pump T.	

Test Successful: Y

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Graeff #2

LOCATION : 9-17s-28w Lane co KS

TICKET No. 12672 D.S.T. No. 2 DATE 2-21-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 30

TOTAL TOOL ..... 52

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.Stands      Single      Total

D.P. ANCHOR STND.Stands      Single      Total

TOTAL ASSEMBLY .....

D.C. ABOVE TOOLS.Stands      Single 1      Total 30

D.P. ABOVE TOOLS.Stands67      Single 1      Total 4130

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4212

TOTAL DEPTH ..... 4192

TOTAL DRILL PIPE ABOVE K.B. .... 20

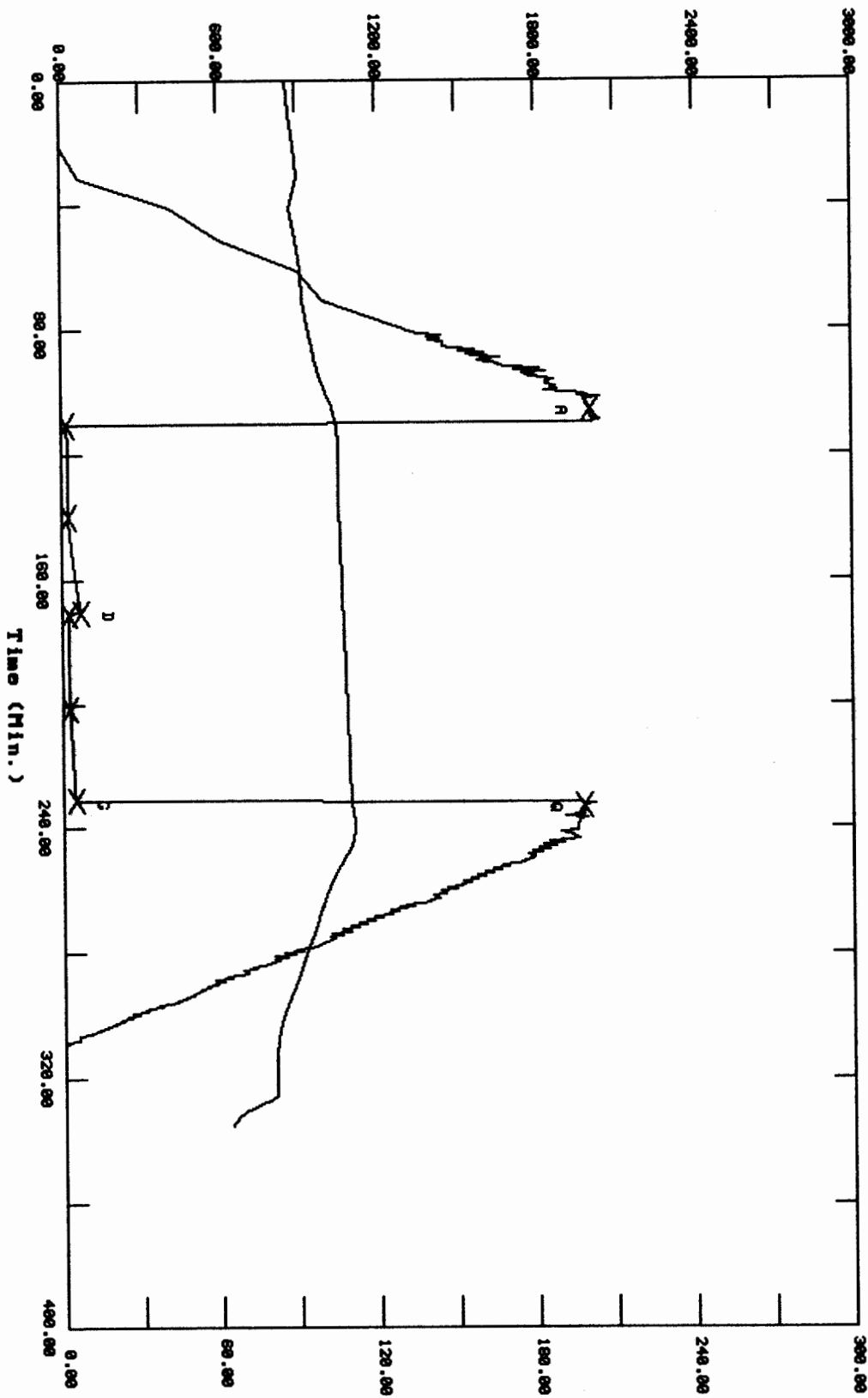
REMARKS:

	P.O. SUB	4018
	C.O. SUB	4138
	S.I. TOOL	4143
	HMV	4148
	JARS	
	SAFETY JOINT	4153
	PACKER	4157
	PACKER	4162
	DEPTH	
	ANCHOR 5'perf	4163
	5' "	4168
	5' "	4173
	5' "	4178
	5' "	4183
	Alpine@4165	
	Ak-1 @4169	
	5'perf	4188
	1' "	4189
	BULLNOSE 3'bullplug	4192
	T.D.	4192

# TEST HISTORY

Flag Points

(Min.)	(K PSig)
A	0.00 2009.36
B	0.00 17.29
C	29.50 21.13
D	30.50 70.02
E	0.00 23.20
F	30.50 24.20
G	29.50 43.96
H	0.00 1981.20

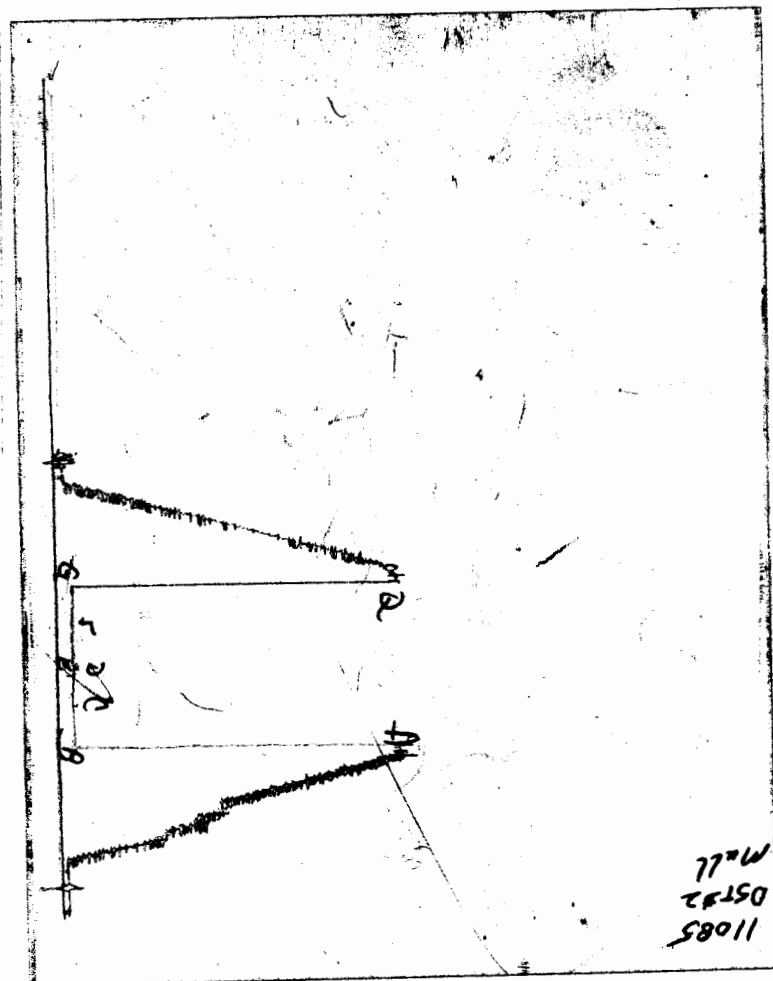


Pressure ( PSig )

Time (Min.)

Temperature (DEG F)

CHART PAGE



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

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

N<sup>o</sup> 12672

Well Name & No. <u>Gracff #2</u>	Test No. <u>2</u>	Date <u>2-21-00</u>
Company <u>Mull Drilling Company, Inc</u>	Zone Tested <u>Lansing 'I'</u>	
Address <u>P.O. Box 2758 Wichita, Ks 67201-2758</u>	Elevation <u>2774</u>	KB <u>2746</u> GL
Co. Rep / Geo. <u>Kim Shoemaker</u>	Cont. <u>Discovery rig 1</u>	Est. Ft. of Pay <u>    </u> Por. <u>    </u> %
Location: Sec. <u>9</u> Twp. <u>17</u> Rge. <u>28</u>	Co. <u>Lane</u>	State <u>Ks</u>
No. of Copies <u>Reg</u>	Distribution Sheet (Y, N) <u>N</u>	Turnkey (Y, N) <u>N</u> Evaluation (Y, N) <u>N</u>

Interval Tested <u>4162-4192</u>	Initial Str Wt./Lbs. <u>40000</u>	Unseated Str Wt./Lbs. <u>40000</u>
Anchor Length <u>30</u>	Wt. Set Lbs. <u>20000</u>	Wt. Pulled Loose/Lbs. <u>50000</u>
Top Packer Depth <u>4157</u>	Tool Weight <u>2000</u>	
Bottom Packer Depth <u>4162</u>	Hole Size — 7 7/8" <u>yes</u>	Rubber Size — 6 3/4" <u>yes</u>
Total Depth <u>4192</u>	Wt. Pipe Run <u>    </u>	Drill Collar Run <u>30</u>
Mud Wt. <u>9.2</u> LCM — Vis. <u>48</u> WL <u>8.4</u>	Drill Pipe Size <u>4 1/2 XH</u>	Ft. Run <u>4130</u>
Blow Description <u>IFP - weak surface blow died in 9 min</u>		
<u>FFP - NO BLOW</u>		

Recovery — Total Feet <u>11</u>	GIP <u>    </u>	Ft. in DC <u>11</u>	Ft. in DP <u>    </u>
Rec. <u>1</u>	Feet Of <u>Clean oil</u>	%gas <u>    </u>	%oil <u>    </u> %water <u>    </u> %mud <u>    </u>
Rec. <u>10</u>	Feet Of <u>50CM</u>	%gas <u>3</u>	%oil <u>    </u> %water <u>97</u> %mud <u>    </u>
Rec. <u>    </u>	Feet Of <u>    </u>	%gas <u>    </u>	%oil <u>    </u> %water <u>    </u> %mud <u>    </u>
Rec. <u>    </u>	Feet Of <u>    </u>	%gas <u>    </u>	%oil <u>    </u> %water <u>    </u> %mud <u>    </u>
Rec. <u>    </u>	Feet Of <u>    </u>	%gas <u>    </u>	%oil <u>    </u> %water <u>    </u> %mud <u>    </u>
BHT <u>110</u>	°F Gravity <u>    </u>	*API D <sub>60</sub> <u>    </u>	°F Corrected Gravity <u>    </u> *API <u>    </u>
RW <u>    </u>	°F Chlorides <u>    </u>	ppm Recovery Chlorides <u>1200</u>	ppm System <u>    </u>

	AK-1	Alpine		
(A) Initial Hydrostatic Mud	<u>2015</u>	<u>2009</u>	PSI Recorder No. <u>3027</u>	T-On Location <u>1430</u>
(B) First Initial Flow Pressure	<u>27</u>	<u>17</u>	PSI (depth) <u>4165</u>	T-Started <u>1436</u>
(C) First Final Flow Pressure	<u>27</u>	<u>21</u>	PSI Recorder No. <u>11085</u>	T-Open <u>1626</u>
(D) Initial Shut-in Pressure	<u>27</u>	<u>20</u>	PSI (depth) <u>4169</u>	T-Pulled <u>1826</u>
(E) Second Initial Flow Pressure	<u>27</u>	<u>23</u>	PSI Recorder No. <u>    </u>	T-Out <u>2011</u>
(F) Second Final Flow Pressure	<u>27</u>	<u>24</u>	PSI (depth) <u>    </u>	T-Off Location <u>2100</u>
(G) Final Shut-in Pressure	<u>27</u>	<u>43</u>	PSI Initial Opening <u>30</u>	Test <input checked="" type="checkbox"/> <u>700</u>
(Q) Final Hydrostatic Mud	<u>1993</u>	<u>1981</u>	PSI Initial Shut-in <u>30</u>	Jars <u>    </u>

Final Flow <u>30</u>	Safety Joint <input checked="" type="checkbox"/> <u>50</u>
Final Shut-in <u>30</u>	Straddle <u>    </u>
	Circ. Sub <u>    </u>
	Sampler <u>    </u>
	Extra Packer <u>    </u>
	Elec. Rec <input checked="" type="checkbox"/> <u>150</u>
	Mileage <u>    </u>
	Other <u>    </u>
	TOTAL PRICE \$ <input checked="" type="checkbox"/> <u>900</u>

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.

Approved By [Signature]

Our Representative Ray Schwager Thank you

TRILOBITE TESTING L.L.C.

OPERATOR : Mull Drilling Co.

DATE 2-22-00

WELL NAME: Graeff #2

KB 2774.00 ft

TICKET NO: 11186 DST #3

LOCATION : 9-17-28 Lane co KS

GR 2766.00 ft

FORMATION: J

INTERVAL : 4190.00 To 4226.00 ft

TD 4226.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 10 Rec.	11058	11058	2346			PF Fr. 0515 to 0525 hr
SI 60 Range(Psi )	4475.0	4475.0	4995.0	0.0	0.0	IS Fr. 0525 to 0625 hr
SF 40 Clock(hrs)	12	12	alpin			SF Fr. 0625 to 0705 hr
FS 120 Depth(ft )	4221.0	4221.0	4197.0	0.0	0.0	FS Fr. 0705 to 0905 hr

	Field	1	2	3	4
A. Init Hydro	2031.0	2021.0	2039.0	0.0	0.0
B. First Flow	66.0	87.0	23.0	0.0	0.0
B1. Final Flow	66.0	87.0	39.0	0.0	0.0
C. In Shut-in	1075.0	1075.0	1094.0	0.0	0.0
D. Init Flow	88.0	95.0	43.0	0.0	0.0
E. Final Flow	100.0	130.0	59.0	0.0	0.0
F. Fl Shut-in	1097.0	1090.0	1092.0	0.0	0.0
G. Final Hydro	2020.0	2024.0	2030.0	0.0	0.0
Inside/Outside	i	I	o		

T STARTED 0330 hr  
 T ON BOTM 0513 hr  
 T OPEN 0515 hr  
 T PULLED 0905 hr  
 T OUT 1030 hr

TOOL DATA-----  
 Tool Wt. 4000.00 lbs  
 Wt Set On Packer 26000.00 lbs  
 Wt Pulled Loose 50000.00 lbs  
 Initial Str Wt 41000.00 lbs  
 Unseated Str Wt 43000.00 lbs  
 Bot Choke 0.75 in  
 Hole Size 7.88 in  
 D Col. ID 2.25 in  
 D. Pipe ID 3.50 in  
 D.C. Length 30.00 ft  
 D.P. Length 4158.00 ft

RECOVERY

Tot Fluid 105.00 ft of 30.00 ft in DC and 75.00 ft in DP  
 135.00 ft of Gas in pipe.  
 45.00 ft of Slightly gassy oil cut mud  
 0.00 ft of 10% gas 25% oil 65% mud  
 50.00 ft of Gassy mud cut oil  
 0.00 ft of 20% gas 40% oil 40% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

MUD DATA-----  
 Mud Type Chemical  
 Weight 9.30 lb/cf  
 Vis. 48.00 S/L  
 W.L. 8.40 in3  
 F.C. 0.00 in  
 Mud Drop N

FLOW DESCRIPTION

Initial Flow:  
 1/4" @ open built to 2 1/2".  
 Initial Shut-In:  
 No return.  
 Final Flow:  
 1/2" @ open built to bottom of bucket  
 in 48 minutes.  
 Final Shut-In:  
 Bled off for 2 minutes. Weak surface  
 return in 4 minutes. Died in 35  
 minutes.

Amt. of fill 0.00 ft  
 Btm. H. Temp. 113.00 F  
 Hole Condition good  
 % Porosity 0.00  
 Packer Size 6.75 in  
 No. of Packers 2  
 Cushion Amt. 0.00  
 Cushion Type  
 Reversed Out N  
 Tool Chased N  
 Tester Shane McBride  
 Co. Rep. Kim Shoemaker  
 Contr. Discovery  
 Rig # 1  
 Unit #  
 Pump T.

SAMPLES:  
 SENT TO:

Test Successful: Y

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Graeff #2

LOCATION : 9-17-28 Lane co KS

TICKET No. 11186 D.S.T. No. 3 DATE 2-22-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 36

TOTAL TOOL ..... 58

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.Stands      Single      Total

D.P. ANCHOR STND.Stands      Single      Total

TOTAL ASSEMBLY ..... 58

D.C. ABOVE TOOLS.Stands      Single 1      Total 30

D.P. ABOVE TOOLS.Stands67      Single 1      Total 4158

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4246

TOTAL DEPTH ..... 4226

TOTAL DRILL PIPE ABOVE K.B. .... 20

REMARKS:

P.O. SUB	
C.O. SUB 1'	4167
S.I. TOOL 5'	4173
HMV 5'	4178
JARS n/a	
SAFETY JOINT 2'	4180
PACKER top	4185
PACKER bottom	4190
DEPTH 4190	
1'	4191
ANCHOR 6' perf	4197
alpine recorder	4197
24' perf	4221
ak-1 recorder	4221
BULLNOSE 5' bullplug	4226
T.D.	4226

Operator.....: Mull Drilling Co.  
Well Name.....: Graeff #2  
DST Number.....: 3

Location.: 9-17s-28w Lane co KS      Recorder No...: 2346  
Test Type: conv                      Recorder Depth: 4197  
Formation: "J"                        Test Interval.: 4190-4226

RESERVOIR CALCULATIONS: Fluid calculations based on shut-in #2

RESERVOIR PARAMETERS USED:

Net Pay.....: 7.00 ft  
Porosity.....: 15.00 %  
Bottom Hole Temp.....: 113.00 F  
Specific Gravity.....: 0.028  
API Gravity.....: 38.00  
Compressibility.....: 0.000007 /psi  
Viscosity.....: 3.3070 cp  
Total Recovery.....: 105.00 ft  
Total Flowing Time.....: 50.00 min.  
Flow Rate.....: 6.32 bbls/d  
Final Flowing Pressure.....: 59.00 psi  
Horner Slope.....: 215.4138 psi/cycle  
Extrapolated Pressure.....: 1123.27 psi  
Formation Volume Factor.....: 1.07 Reservoir/Surface  
Well Bore Radius.....: 3.94 in

RESULTS:

Effective Permeability.....: 2.409279 md  
Flow Capacity.....: 16.8650 md.ft  
Transmissibility.....: 5.0998 md.ft/cp  
Skin Factor.....: 2.0642  
Radius of Investigation.....: 22.70995 ft  
Damage Ratio.....: 1.5698  
Productivity Index.....: 0.0059 bbls/psi.d  
Productivity Index W/O Damage.: 0.0093 bbls/psi.d

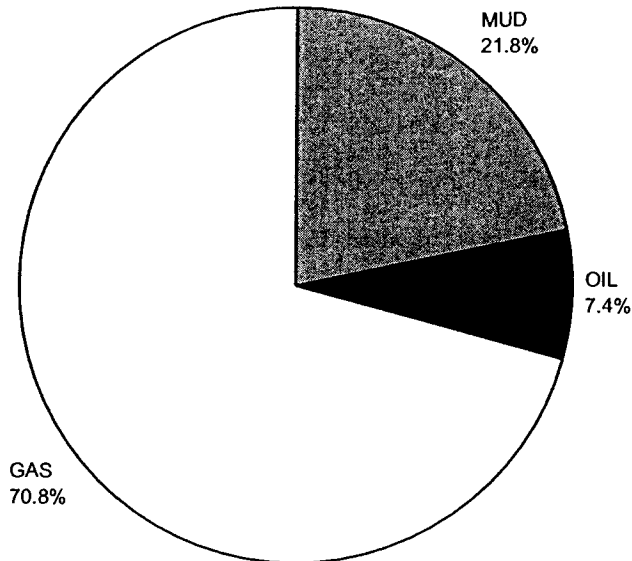
CALCULATED RECOVERY ANALYSIS

DST 3

TICKET 11186

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL	1	135	100	135	0	0	0	0	0	0
PIPE	2	45	10	4.5	25	11.25	0	0	65	29.25
	3	30	20	6	40	0	0	0	40	12
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
PIPE	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
DRILL	1	30	20	6	40	12	0	0	40	12
COLLARS	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
TOTAL		240	0	151.5	0	23.25	0	0	0	53.25

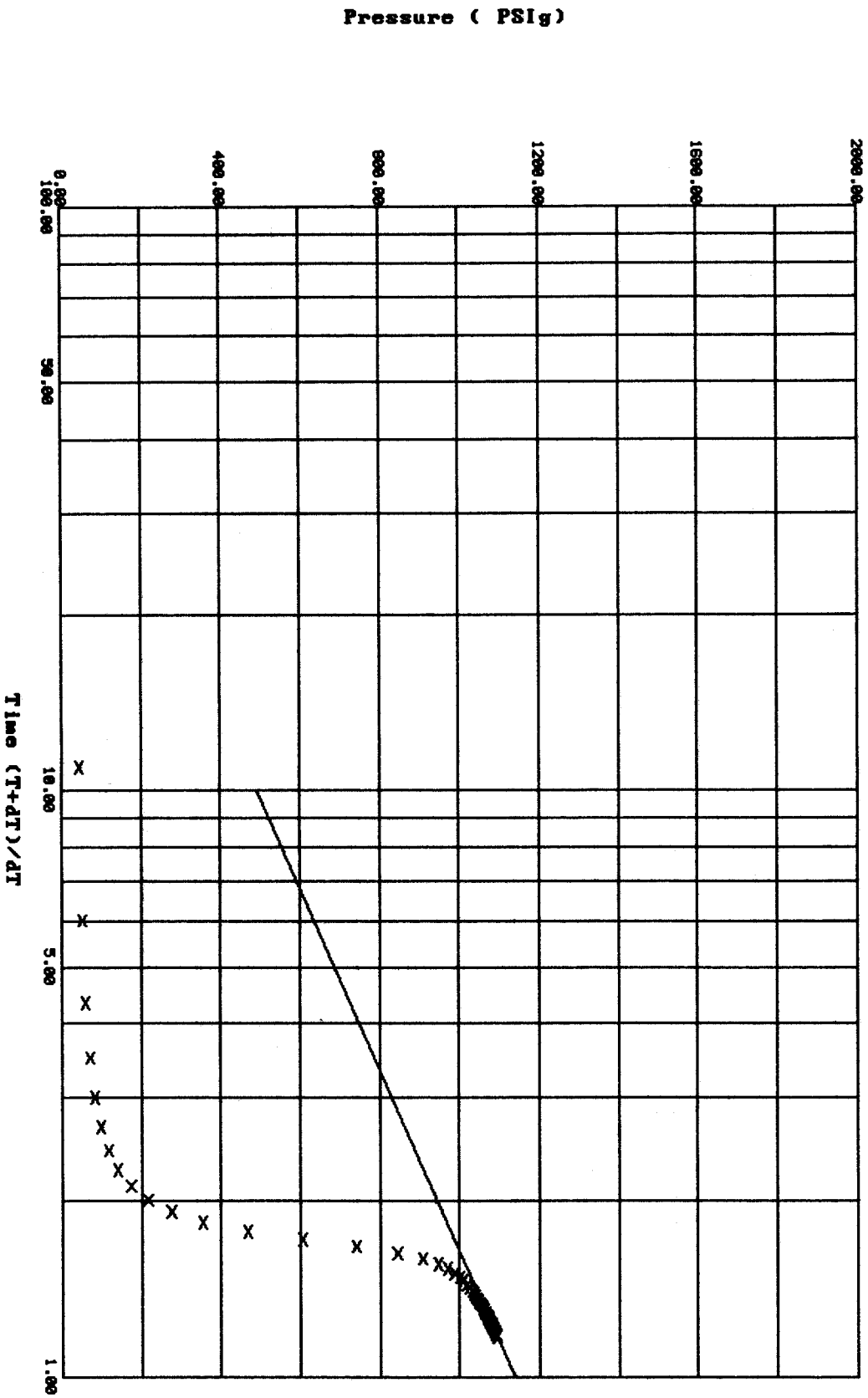
BBL OIL= 0.218655 \* HRS OPEN 0.83 = BBL/DAY 6.3225542  
 BBL WATER= 0 \* = 0  
 BBL MUD= 0.645255  
 BBL GAS = 2.09835



# Horner Plot: shut-in #1

11186 DST #3 #2 Graeff Multi Drilling Co.

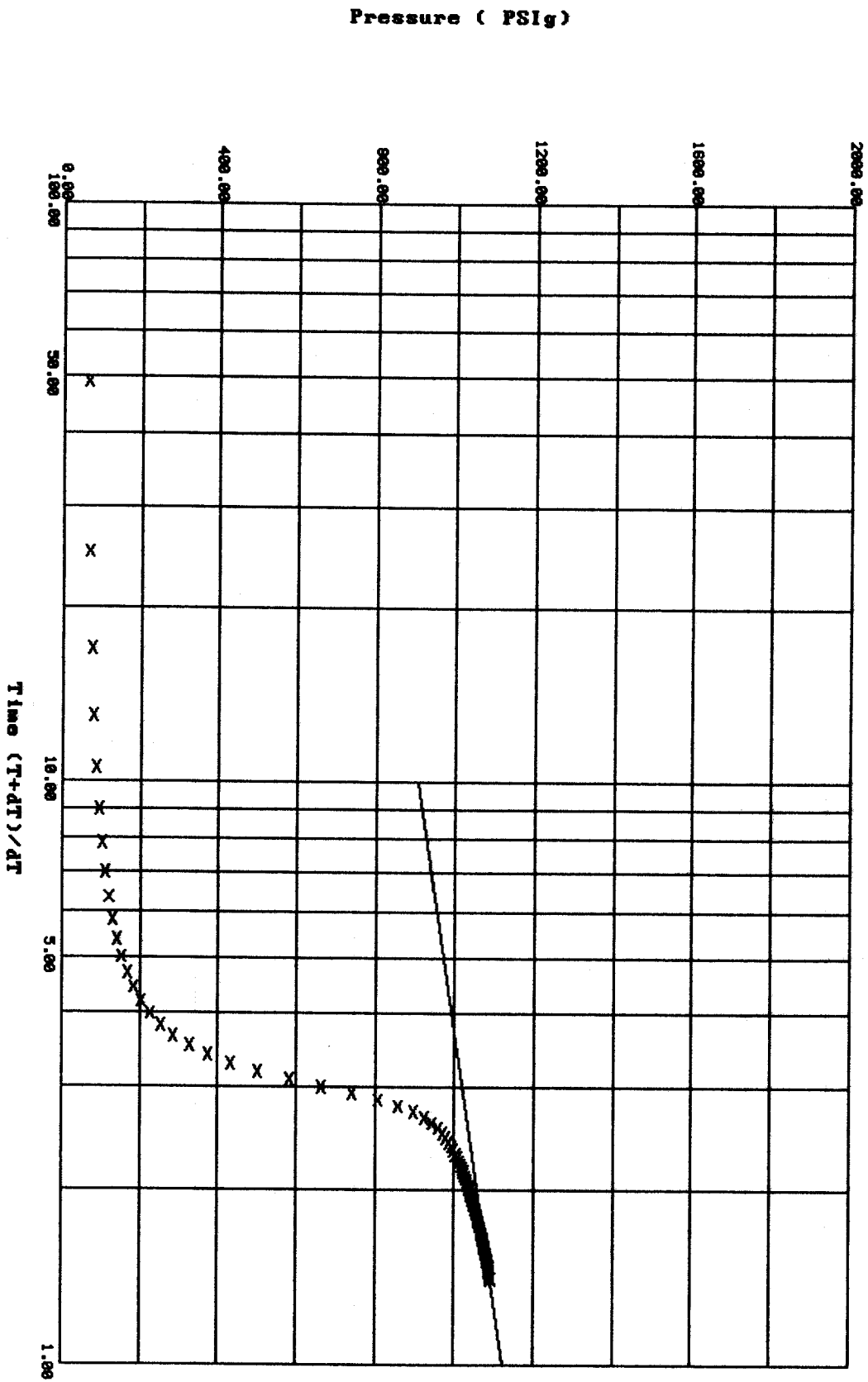
Slope: 645.3101 PSig/cycle  
 Ext. Pressure: 1137.8759 PSig



# Horner Plot: shut-in #2

11186 DST #3 #2 Graeff Mull Drilling Co.

Slope: 215.4138 PSig/cycle  
Ext. Pressure: 1123.2722 PSig

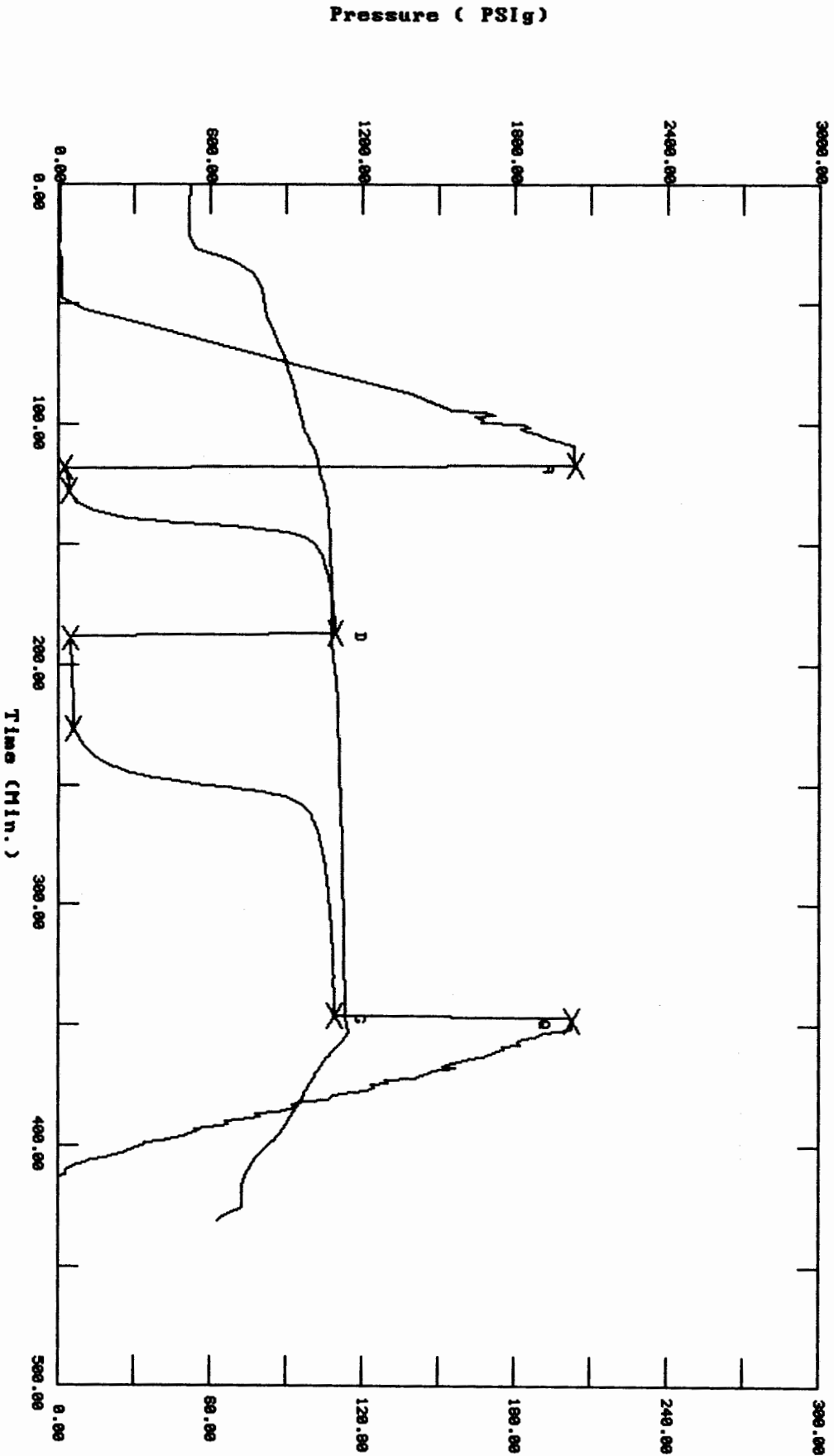


11186 DST #3 #2 Graeff Null Drilling Co.

# TEST HISTORY

(Min.) P (PSig) Flag Points

R1	0.00	2839.38
B1	0.00	23.88
C1	18.00	39.94
D1	59.00	1094.05
E1	0.00	43.48
F1	38.00	59.48
G1	119.00	1092.11
Q1	0.00	2839.25

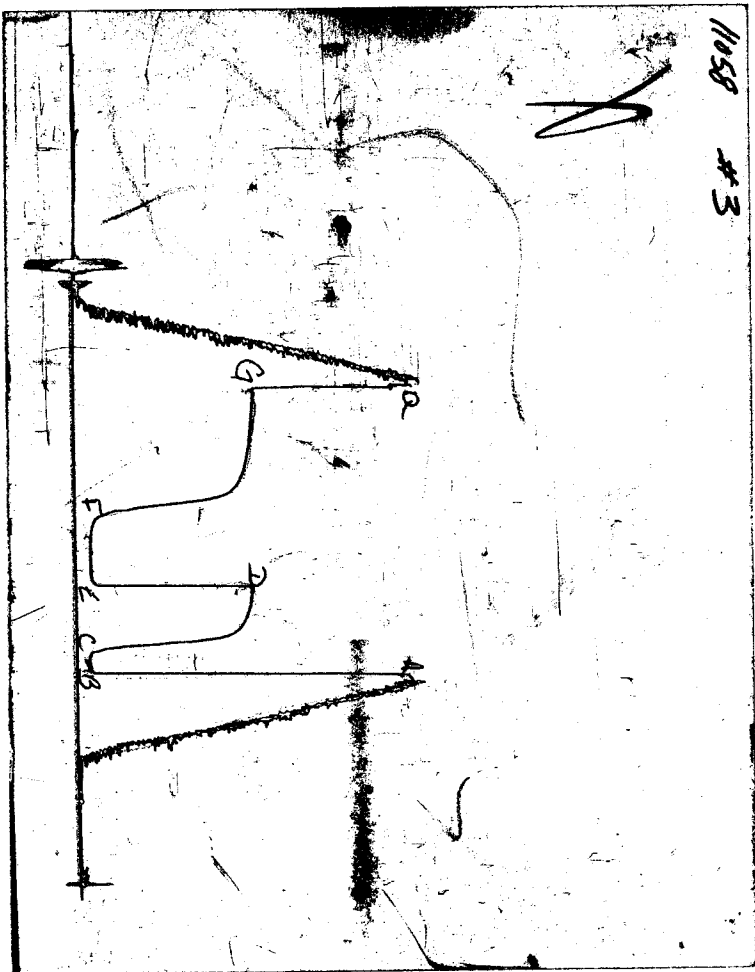


Temperature (DEG F)

Pressure ( PSig)

Time (Min.)

CHART PAGE



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

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 11186

Well Name & No. <u>Gracff #2</u>		Test No. <u>3</u>	Date <u>2-22-00</u>
Company <u>Mull Drilling Co.</u>		Zone Tested <u>J</u>	
Address <u>P.O. Box 2758 Wichita KS 67201</u>		Elevation <u>2774</u> KB <u>2766</u> GL	
Co. Rep / Geo. <u>Kim</u>	Cont. <u>Dis #1</u>	Est. Ft. of Pay	Por. %
Location: Sec. <u>9</u>	Twp. <u>17</u>	Rge. <u>28</u>	Co. <u>Lane</u> State <u>Ks</u>
No. of Copies <u>None</u>	Distribution Sheet (Y, N)	Turnkey (Y, N)	Evaluation (Y, N)

Interval Tested <u>4190</u>	<u>4226</u>	Initial Str Wt./Lbs. <u>4,000</u>	Unseated Str Wt./Lbs. <u>43,000</u>
Anchor Length	<u>36</u>	Wt. Set Lbs. <u>24,000</u>	Wt. Pulled Loose/Lbs. <u>50,000</u>
Top Packer Depth	<u>4185</u>	Tool Weight <u>4,000</u>	
Bottom Packer Depth	<u>4190</u>	Hole Size — 7 7/8" <input checked="" type="checkbox"/>	Rubber Size — 6 3/4" <input checked="" type="checkbox"/>
Total Depth	<u>4226</u>	Wt. Pipe Run	Drill Collar Run <u>30' H 90</u>
Mud Wt. <u>9.3</u>	LCM <u>#1</u> Vis. <u>40</u> Wt. <u>8.4</u>	Drill Pipe Size <u>4 1/2 XH</u>	Ft. Run <u>4158' 6 1/2" stem</u>
Blow Description <u>1/4" in @ open built to 2 1/2" in</u>			
<u>No return</u>			
<u>1/2" @ open built to B.O. 13 in 48 min</u>			
<u>Bled off for 2 min weak surface return in 4 min died in 35 min.</u>			

Recovery — Total Feet <u>105'</u>	GIP <u>135'</u>	Ft. in DC <u>30'</u>	Ft. in DP <u>75'</u>
Rec. <u>45'</u>	Feet Of <u>silly gassy oil cut mud</u>	10 %gas	25 %oil
Rec. <u>60'</u>	Feet Of <u>gassy mud cut oil</u>	20 %gas	40 %oil
Rec. _____	Feet Of _____	%gas	%oil
Rec. _____	Feet Of _____	%gas	%oil
Rec. _____	Feet Of _____	%gas	%oil

BHT <u>113°</u>	°F Gravity	°API @	°F Corrected Gravity	°API
RW _____	°F Chlorides	ppm Recovery	Chlorides <u>1200</u>	ppm System
(A) Initial Hydrostatic Mud	<u>2031</u> <u>2039</u> PSI	Recorder No. <u>2346</u>	T-Started <u>03:30 A.M.</u>	
(B) First Initial Flow Pressure	<u>66</u> <u>23</u> PSI	(depth) <u>4197'</u>	T-Open <u>05:15 A.M.</u>	
(C) First Final Flow Pressure	<u>66</u> <u>39</u> PSI	Recorder No. <u>11058</u>	T-Pulled <u>09:05 A.M.</u>	
(D) Initial Shut-in Pressure	<u>1075</u> <u>1094</u> PSI	(depth) <u>4221'</u>	T-Out <u>10:30 A.M.</u>	
(E) Second Initial Flow Pressure	<u>88</u> <u>43</u> PSI	Recorder No. _____	on loc <u>01:50 A.M.</u>	
(F) Second Final Flow Pressure	<u>100</u> <u>59</u> PSI	(depth) _____	off loc <u>11:10 A.M.</u>	
(G) Final Shut-in Pressure	<u>1097</u> <u>1092</u> PSI	Initial Opening <u>10</u>	Test <u>X</u>	
(H) Final Hydrostatic Mud	<u>2020</u> <u>2030</u> PSI	Initial Shut-in <u>60</u>	Jars _____	
	<u>AK-1</u> <u>AK-1</u>	Final Flow <u>40</u>	Safety Joint <u>X</u>	
		Final Shut-in <u>120</u>	Straddle _____	

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.

Approved By [Signature]  
 Our Representative Steve McBride

Elect. Rec. X  
 Other \_\_\_\_\_  
 TOTAL PRICE \$ \_\_\_\_\_

TRILOBITE TESTING L.L.C.

OPERATOR : Mull Drilling Co.

DATE 2-22-00

WELL NAME: Graeff #2

KB 2774.00 ft

TICKET NO: 11187

DST #4

LOCATION : 9-17-28 Lane co KS

GR 2766.00 ft

FORMATION: K

INTERVAL : 4227.00 To 4249.00 ft

TD 4249.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 10 Rec.	11058	11058	2346			PF Fr. 1840 to 1850 hr
SI 60 Range (Psi )	4475.0	4475.0	4995.0	0.0	0.0	IS Fr. 1850 to 1950 hr
SF 40 Clock (hrs)	12	12	alpin			SF Fr. 1950 to 2030 hr
FS 120 Depth (ft )	4244.0	4244.0	4228.0	0.0	0.0	FS Fr. 2030 to 2230 hr

	Field	1	2	3	4	
A. Init Hydro	2076.0	2105.0	2051.0	0.0	0.0	T STARTED 1715 hr
B. First Flow	111.0	127.0	61.0	0.0	0.0	T ON BOTM 1837 hr
B1. Final Flow	133.0	133.0	124.0	0.0	0.0	T OPEN 1840 hr
C. In Shut-in	1008.0	998.0	998.0	0.0	0.0	T PULLED 2230 hr
D. Init Flow	200.0	211.0	146.0	0.0	0.0	T OUT 0125 hr
E. Final Flow	344.0	354.0	364.0	0.0	0.0	
F. Fl Shut-in	997.0	992.0	992.0	0.0	0.0	
G. Final Hydro	2065.0	2080.0	2039.0	0.0	0.0	
Inside/Outside	i	I	o			

TOOL DATA-----

Tool Wt.	4000.00 lbs
Wt Set On Packer	26000.00 lbs
Wt Pulled Loose	55000.00 lbs
Initial Str Wt	41000.00 lbs
Unseated Str Wt	46000.00 lbs
Bot Choke	0.75 in
Hole Size	7.88 in
D Col. ID	2.25 in
D. Pipe ID	3.50 in
D.C. Length	30.00 ft
D.P. Length	4192.00 ft

RECOVERY

Pot Fluid 930.00 ft of 30.00 ft in DC and 900.00 ft in DP  
 2670.00 ft of Gas in pipe.  
 590.00 ft of Clean gassy oil  
 0.00 ft of 40% gas 60% oil  
 120.00 ft of Mud cut gassy oil  
 0.00 ft of 30% gas 40% oil 30% mud  
 120.00 ft of Mud cut gassy water with trace of oil  
 0.00 ft of 15% gas 60% water 25% mud  
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 30.00

MUD DATA-----

Mud Type	Chemical
Weight	9.30 lb/cf
Vis.	53.00 S/L
W.L.	8.00 in3
F.C.	0.00 in
Mud Drop N	

BLOW DESCRIPTION

Initial Flow:  
 Bottom of bucket in 1 1/2 minutes.  
 Initial Shut-In:  
 Bled off 5 minutes. Return in 1/2 minute. Bottom of bucket in 8 minutes  
 Final Flow:  
 Bottom of bucket @ open.  
 Final Shut-In:  
 Bled off 3 minutes. Return in 1 minute. Bottom of bucket in 90 minutes.

Amt. of fill	0.00 ft
Btm. H. Temp.	126.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Shane McBride
Co. Rep.	Kim Shoemaker
Contr.	Discovery
Rig #	1
Unit #	
Pump T.	

SAMPLES:  
 SENT TO:

Test Successful: Y

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Graeff #2

LOCATION : 9-17-28 Lane co KS

TICKET No. 11187 D.S.T. No. 4 DATE 2-22-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 22

TOTAL TOOL ..... 44

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.	Stands	Single	Total
-------------------	--------	--------	-------

D.P. ANCHOR STND.	Stands	Single	Total
-------------------	--------	--------	-------

TOTAL ASSEMBLY ..... 44

D.C. ABOVE TOOLS.	Stands	Single 1	Total 30
-------------------	--------	----------	----------

D.P. ABOVE TOOLS.	Stands 67	Single 1	Total 4192
-------------------	-----------	----------	------------

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4266

TOTAL DEPTH ..... 4249

TOTAL DRILL PIPE ABOVE K.B. .... 17

REMARKS:

P.O. SUB	
C.O. SUB 1'	4204
S.I. TOOL 5'	4210
HMV 5'	4215
JARS n/a	
SAFETY JOINT 2'	4217
PACKER top	4222
PACKER bottom	4227
DEPTH 4227	
1'	4228
ANCHOR alpine recorder	4228
16'perf	4244
ak-1 recorder	4244
BULLNOSE 5' bullplug	4249
T.D.	4249

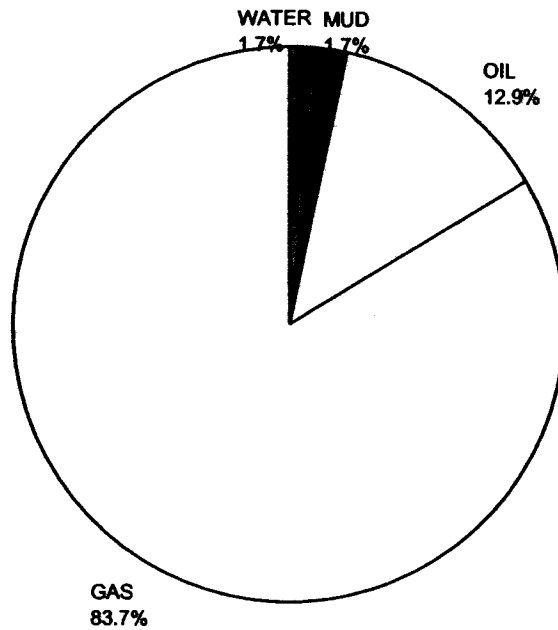
CALCULATED RECOVERY ANALYSIS

DST 4

TICKET 11187

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL	1	2670	100	2670	0	0	0	0	0	0
PIPE	2	690	40	276	60	414	0	0	0	0
	3	120	30	36	40	48	0	0	30	36
	4	90	15	13.5	0	0	60	54	25	22.5
	5	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
PIPE	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
DRILL	1	30	15	4.5	0	0	60	18	25	7.5
COLLARS	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>		<b>3600</b>	<b>0</b>	<b>3000</b>	<b>0</b>	<b>462</b>	<b>0</b>	<b>72</b>	<b>0</b>	<b>66</b>

BBL OIL=	6.56964	*	HRS OPEN	0.83	=	BBL/DAY	189.96549
BBL WATER=	0.8559	*			=		24.748916
BBL MUD=	0.868545						
BBL GAS =	42.618015						

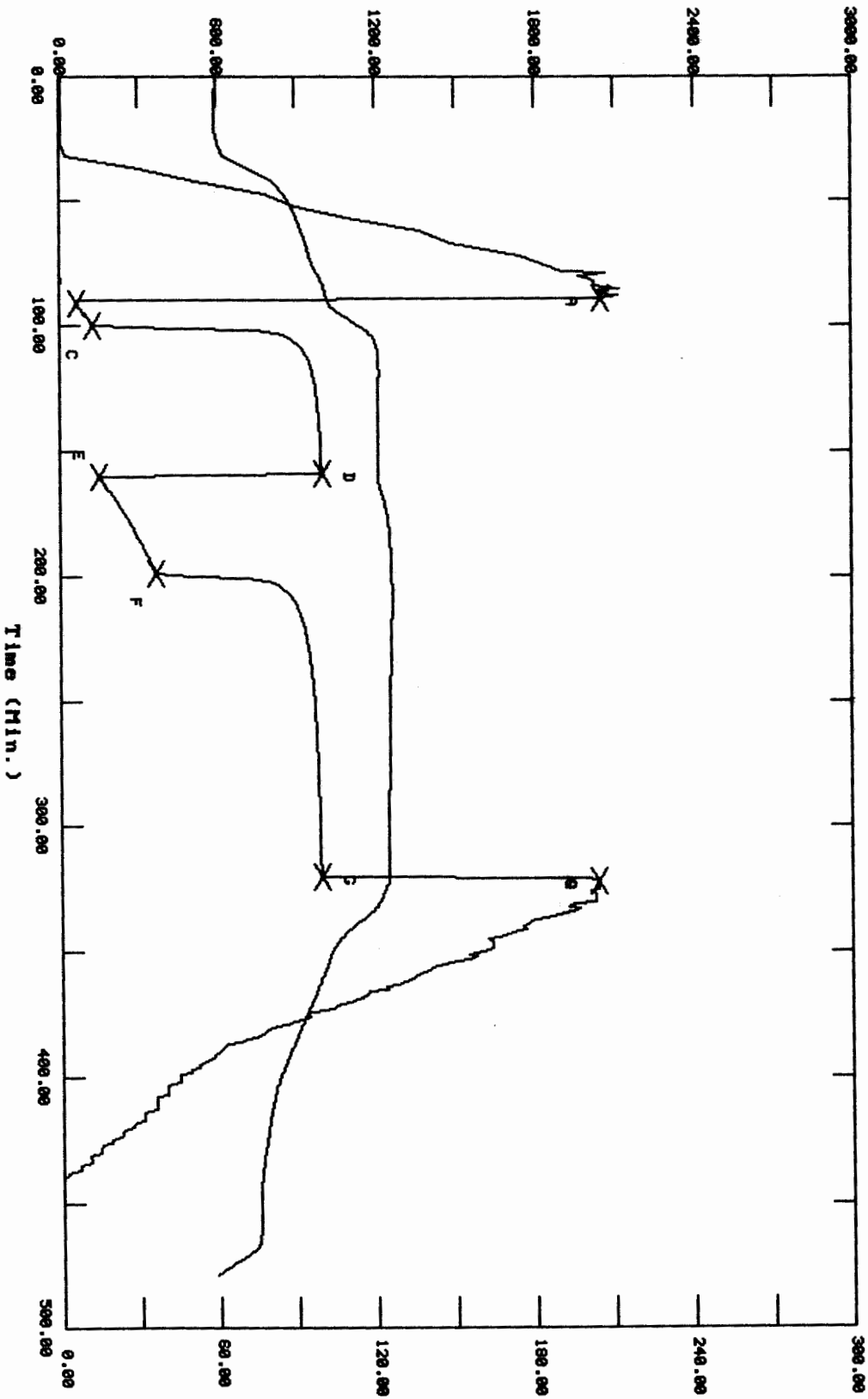


11187 DST #4 Graeff #2 Multi Drilling Co.

# TEST HISTORY

Flag Points  
(Min.) (K Psi)

R1	0.00	2831.29
B1	0.00	81.87
C1	9.00	124.83
D1	59.00	998.98
E1	0.00	146.96
F1	39.00	384.88
G1	121.00	992.69
H1	0.00	2839.88

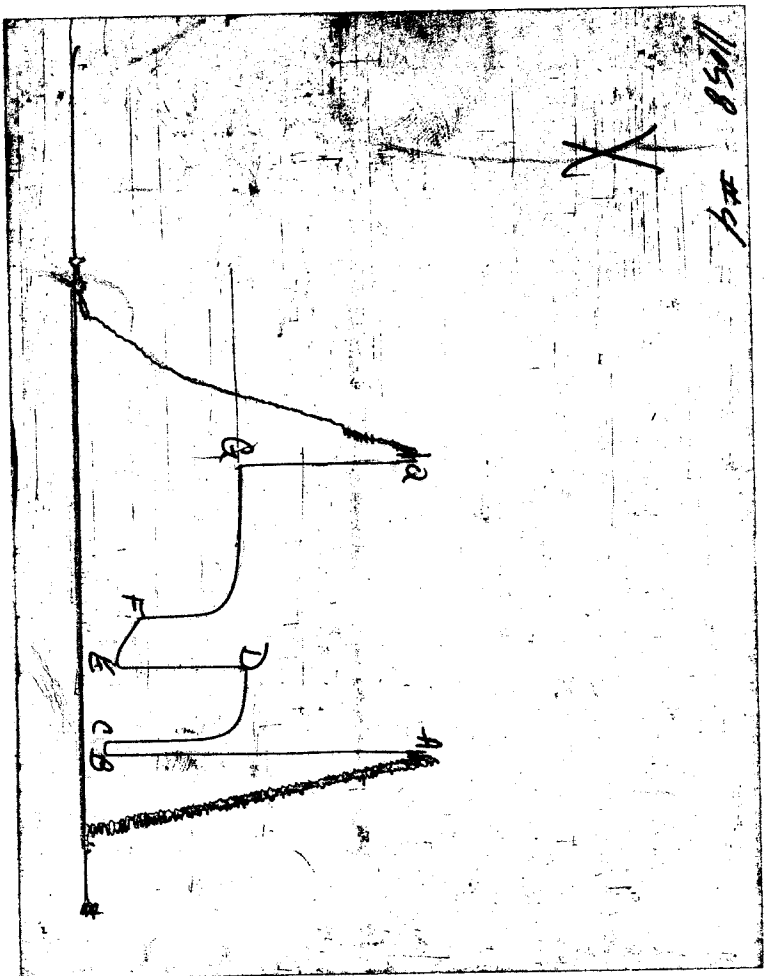


Pressure ( PSIg )

Temperature ( DEG F )

Time (Min.)

CHART PAGE



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

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 11187

Well Name & No. <u>Gruff #2</u>		Test No. <u>4</u>	Date <u>2-22-00</u>
Company <u>Mull Drilling Co.</u>		Zone Tested <u>K</u>	
Address <u>P.O. Box 2758 Wichita, Ks 67201</u>		Elevation <u>2774'</u> KB <u>2766'</u> GL	
Co. Rep / Geo. <u>Kim Shoemaker</u> Cont. <u>Dis #1</u>		Est. Ft. of Pay _____ Por. _____ %	
Location: Sec. <u>9</u>	Twp. <u>17</u>	Rge. <u>28</u>	Co. <u>Lane</u> State <u>Ks</u>
No. of Copies <u>None</u> Distribution Sheet (Y, N) <u>N</u>		Turnkey (Y, N) _____ Evaluation (Y, N) _____	

Interval Tested <u>4227</u> <u>4249</u>	Initial Str Wt./Lbs. <u>4100</u>	Unseated Str Wt./Lbs. <u>41600</u>
Anchor Length _____ <u>22</u>	Wt. Set Lbs. <u>2600</u>	Wt. Pulled Loose/Lbs. <u>5500</u>
Top Packer Depth _____ <u>4222</u>	Tool Weight _____	
Bottom Packer Depth _____ <u>4227</u>	Hole Size — 7 7/8" <input checked="" type="checkbox"/> Rubber Size — 6 3/4" <input checked="" type="checkbox"/>	
Total Depth _____ <u>4249</u>	Wt. Pipe Run _____	Drill Collar Run <u>30' #90</u>
Mud Wt. <u>9.3</u> LCM <u>1</u> Vis. <u>53</u> WL <u>8.0</u>	Drill Pipe Size <u>4 1/2 XH</u> Ft. Run <u>4192 67 1/2 stand.</u>	

Blow Description B.O.B in 1 1/2 min.  
Bled off 5 min, return in 1/2 min B.O.B in 8 min.  
B.O.B @ open  
Bled off 3 min return in 1 min B.O.B in 90 min.

Recovery — Total Feet <u>930'</u>	GIP _____	Ft. in DC <u>30'</u>	Ft. in DP <u>900'</u>
Rec. <u>690</u> Feet Of <u>degreased oil</u>	<u>40%</u> gas <u>60%</u> oil	<u>0%</u> water	<u>0%</u> mud
Rec. <u>120</u> Feet Of <u>mc go</u>	<u>30%</u> gas <u>40%</u> oil	<u>0%</u> water	<u>30%</u> mud
Rec. <u>120</u> Feet Of <u>mc gw w/ oil trace</u>	<u>15%</u> gas <u>Trace</u> oil	<u>60%</u> water	<u>25%</u> mud
Rec. _____ Feet Of _____	<u>0%</u> gas <u>0%</u> oil	<u>0%</u> water	<u>0%</u> mud
Rec. _____ Feet Of _____	<u>0%</u> gas <u>0%</u> oil	<u>0%</u> water	<u>0%</u> mud

BHT 126° °F Gravity 29 °API @ 50 °F Corrected Gravity 30 °API  
 RW \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides 1200 ppm System

(A) Initial Hydrostatic Mud	<u>2076</u> <u>2051</u> PSI	Recorder No. <u>2346</u>	T-Started <u>17:15 p.m.</u>
(B) First Initial Flow Pressure	<u>111</u> <u>61</u> PSI	(depth) <u>4228'</u>	T-Open <u>18:40 p.m.</u>
(C) First Final Flow Pressure	<u>133</u> <u>124</u> PSI	Recorder No. <u>11058</u>	T-Pulled <u>22:30 p.m.</u>
(D) Initial Shut-in Pressure	<u>1008</u> <u>998</u> PSI	(depth) <u>4244'</u>	T-Out <u>01:25 A.M.</u>
(E) Second Initial Flow Pressure	<u>200</u> <u>146</u> PSI	Recorder No. _____	offer <u>16:30 p.m.</u>
(F) Second Final Flow Pressure	<u>344</u> <u>364</u> PSI	(depth) _____	offer <u>02:10 A.M.</u>
(G) Final Shut-in Pressure	<u>997</u> <u>992</u> PSI	Initial Opening <u>10</u>	Test <u>X</u>
(H) Final Hydrostatic Mud	<u>2065</u> <u>2039</u> PSI	Initial Shut-in <u>60</u>	Jars _____
	<u>AL-1</u> <u>AL-2</u>	Final Flow <u>40</u>	Safety Joint <u>X</u>
		Final Shut-in <u>120</u>	Straddle _____
			Circ. Sub <u>X N/C</u>
			Sampler _____
			Extra Packer _____
			Elect. Rec. <u>X</u>
			Other _____
			TOTAL PRICE \$ _____

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.

Approved By [Signature]  
 Our Representative [Signature]

TRILOBITE TESTING L.L.C.

OPERATOR : Mull Drilling Co.

DATE 2-23-00

WELL NAME: Graeff #2

KB 2774.00 ft

TICKET NO: 11188 DST #5

LOCATION : 9-17-28

GR 2766.00 ft

FORMATION: Marmaton

INTERVAL : 4302.00 To 4336.00 ft

TD 4336.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 10 Rec.	11058	11058	2346			PF Fr. 1745 to 1755 hr
SI 60 Range(Psi )	4475.0	4475.0	4995.0	0.0	0.0	IS Fr. 1755 to 1855 hr
SF 40 Clock(hrs)	12	12	alpin			SF Fr. 1855 to 1935 hr
FS 120 Depth(ft )	4331.0	4331.0	4303.0	0.0	0.0	FS Fr. 1935 to 2135 hr

	Field	1	2	3	4
A. Init Hydro	2154.0	2168.0	2097.0	0.0	0.0
B. First Flow	100.0	131.0	24.0	0.0	0.0
B1. Final Flow	100.0	127.0	44.0	0.0	0.0
C. In Shut-in	895.0	895.0	855.0	0.0	0.0
D. Init Flow	122.0	150.0	47.0	0.0	0.0
E. Final Flow	144.0	150.0	85.0	0.0	0.0
F. Fl Shut-in	760.0	751.0	724.0	0.0	0.0
G. Final Hydro	2143.0	2127.0	2037.0	0.0	0.0
Inside/Outside	i	i	o		

T TIME DATA-----

T STARTED 1615 hr

T ON BOTM 1743 hr

T OPEN 1745 hr

T PULLED 2135 hr

T OUT 2340 hr

TOOL DATA-----

Tool Wt. 4000.00 lbs

Wt Set On Packer 26000.00 lbs

Wt Pulled Loose 55000.00 lbs

Initial Str Wt 42000.00 lbs

Unseated Str Wt 42000.00 lbs

Bot Choke 0.75 in

Hole Size 7.88 in

D Col. ID 2.25 in

D. Pipe ID 3.50 in

D.C. Length 30.00 ft

D.P. Length 4255.00 ft

RECOVERY

Pot Fluid 140.00 ft of 30.00 ft in DC and 110.00 ft in DP

20.00 ft of Drilling mud

0.00 ft of 100% mud

120.00 ft of Mud cut water

0.00 ft of 50% water 50% mud

0.00 ft of

0.00 ft of

0.00 ft of

0.00 ft of

SALINITY 32000.00 P.P.M. A.P.I. Gravity 0.00

MUD DATA-----

Mud Type	Chemical
Weight	9.30 lb/cf
Vis.	48.00 S/L
W.L.	8.00 in3
F.C.	0.00 in

Mud Drop N

BLOW DESCRIPTION

Initial Flow:

1/4" @ open built to 3".

Initial Shut-In:

No return.

Final Flow:

Weak surface blow in 8 minutes built to 1/2".

Final Shut-In:

No return.

Amt. of fill	0.00 ft
Btm. H. Temp.	118.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Shane McBride
Co. Rep.	Kim Shoemaker
Contr.	Discovery
Rig #	1
Unit #	
Pump T.	

SAMPLES:

SENT TO:

Test Successful: Y

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Graeff #2

LOCATION : 9-17-28

TICKET No. 11188 D.S.T. No. 5 DATE 2-23-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 34

TOTAL TOOL ..... 56

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.	Stands	Single	Total
-------------------	--------	--------	-------

D.P. ANCHOR STND.	Stands	Single	Total
-------------------	--------	--------	-------

TOTAL ASSEMBLY ..... 56

D.C. ABOVE TOOLS.	Stands	Single 1	Total 30
-------------------	--------	----------	----------

D.P. ABOVE TOOLS.	Stands 69	Single 1	Total 4255
-------------------	-----------	----------	------------

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4341

TOTAL DEPTH ..... 4336

TOTAL DRILL PIPE ABOVE K.B. .... 5

REMARKS:

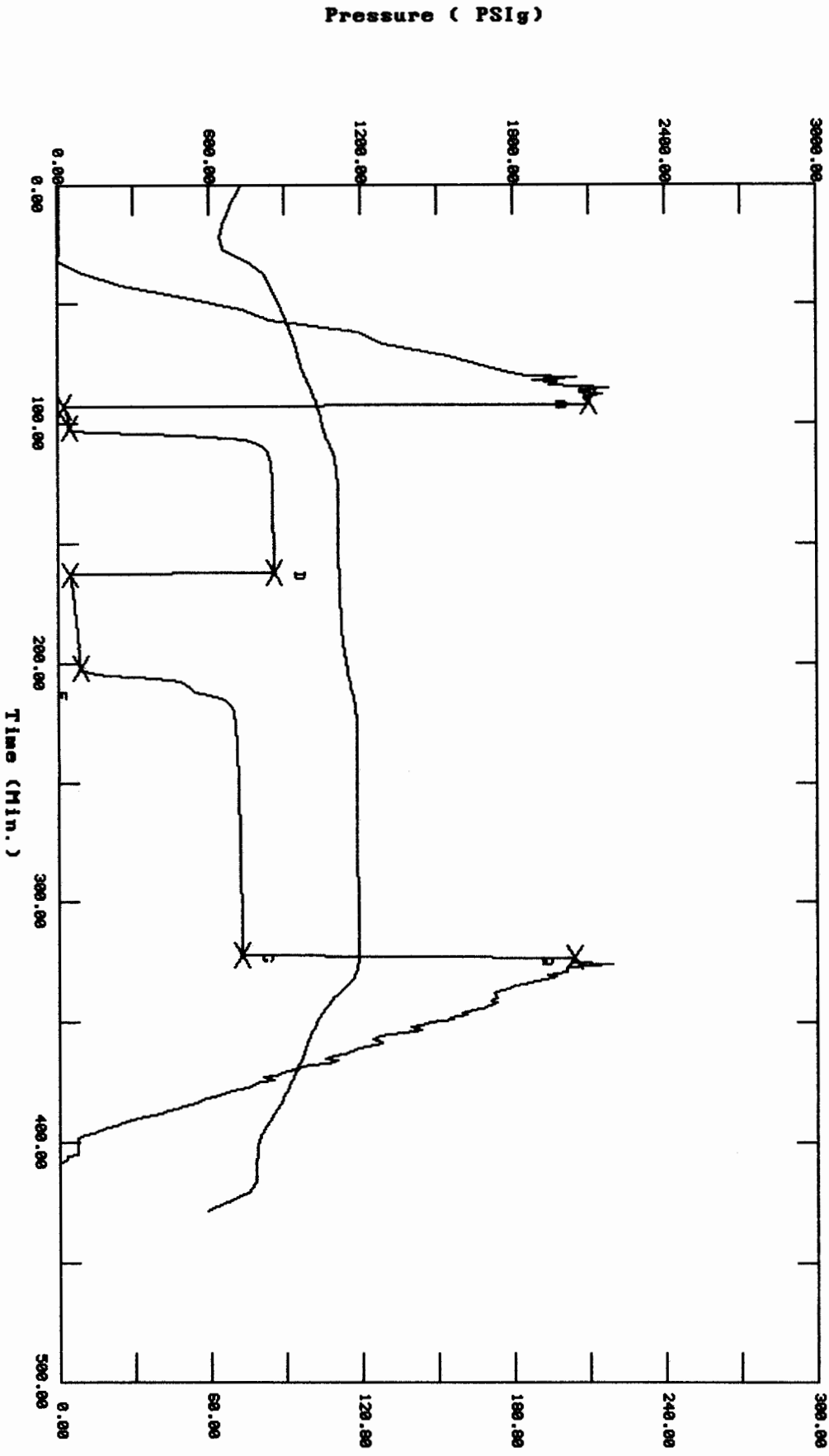
P.O. SUB	
C.O. SUB 1'	4279
S.I. TOOL 5'	4285
HMV 5'	4290
JARS n/a	
SAFETY JOINT 2'	4292
PACKER top	4297
PACKER bottom	4302
DEPTH 4302	
1'	4303
ANCHOR alpine recorder	4303
28' perf	4331
ak-1 recorder	4331
BULLNOSE 5' bullplug	4336
T.D.	4336

11188 DST #5 Graeff #2 Null Drilling Co.

# TEST HISTORY

Flag Points

Flag Points	Time (Min.)	Pressure (PSig)
A1	0.00	2897.90
B1	0.00	24.06
C1	9.00	44.87
D1	68.00	855.59
E1	0.00	47.85
F1	39.00	85.88
G1	128.00	724.85
H1	0.00	2897.92

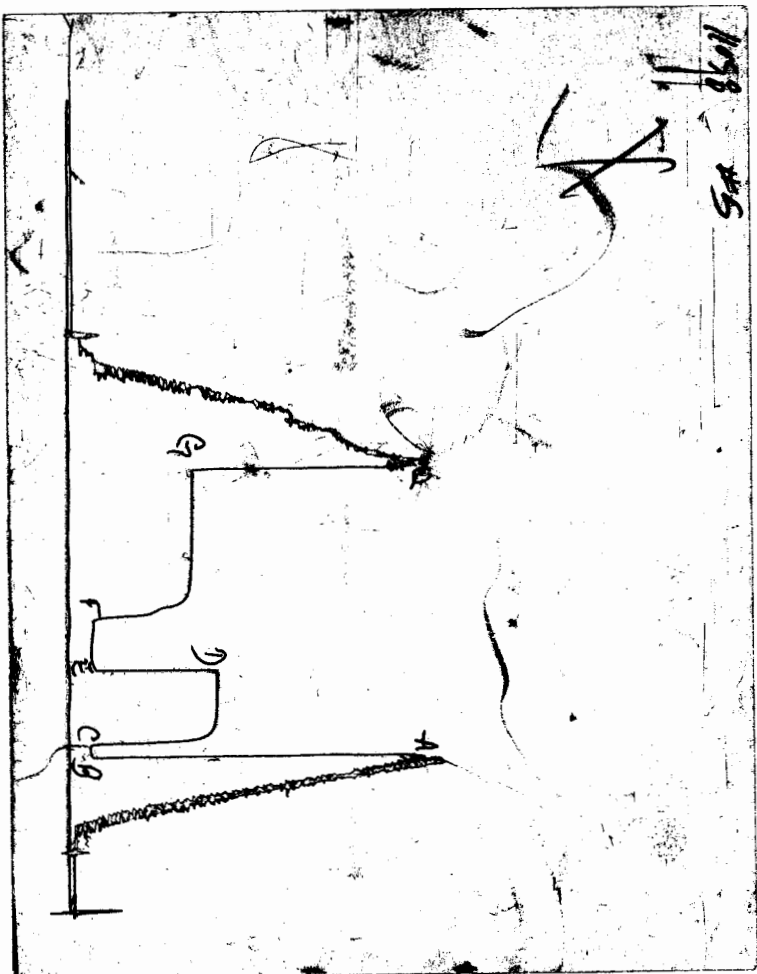


Temperature (DEG F)

Pressure (PSig)

Time (Min.)

CHART PAGE



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

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 11188

Well Name & No. <u>Groff #2</u>		Test No. <u>5</u>	Date <u>2-23-00</u>
Company <u>Mull Drilling Co.</u>		Zone Tested <u>unmated</u>	
Address <u>P.O. Box 2758 Wichita KS 67201</u>		Elevation <u>2774</u> KB <u>2766</u> GL	
Co. Rep / Geo. <u>Kim Shoemaker</u> Cont. <u>D's #1</u>		Est. Ft. of Pay _____ Por. _____ %	
Location: Sec. <u>9</u>	Twp. <u>17</u>	Rge. <u>28</u>	Co. <u>Lawrence</u> State <u>KS</u>
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____	Evaluation (Y, N) _____

Interval Tested <u>4302</u> <u>4336</u>	Initial Str Wt./Lbs. <u>42,000</u>	Unseated Str Wt./Lbs. <u>42,000</u>
Anchor Length _____	Wt. Set Lbs. <u>26,000</u>	Wt. Pulled Loose/Lbs. <u>55,000</u>
Top Packer Depth _____	Tool Weight <u>4,000</u>	
Bottom Packer Depth _____	Hole Size — 7 7/8" _____	Rubber Size — 6 3/4" <input checked="" type="checkbox"/>
Total Depth _____	Wt. Pipe Run _____	Drill Collar Run <u>30'</u>
Mud Wt. <u>9.3</u> LCM <u>#1</u> Vis. <u>48</u> WL <u>8.0</u>	Drill Pipe Size <u>4 1/2 x 4</u>	Ft. Run <u>4255'</u>
Blow Description <u>1/4" @ open built to 3" w.</u>		
<u>No return</u>		
<u>Wealth surface blow in 8min built to 1/2" w.</u>		
<u>No return</u>		

Recovery — Total Feet <u>140'</u>	GIP _____	Ft. in DC <u>30</u>	Ft. in DP <u>110'</u>
Rec. <u>20'</u>	Feet Of <u>Drily mud</u>	%gas _____	%oil _____ %water <u>10</u> %mud _____
Rec. <u>120'</u>	Feet Of <u>mud out water</u>	%gas _____	%oil _____ %water <u>50</u> %mud _____
Rec. _____	Feet Of _____	%gas _____	%oil _____ %water _____ %mud _____
Rec. _____	Feet Of _____	%gas _____	%oil _____ %water _____ %mud _____
Rec. _____	Feet Of _____	%gas _____	%oil _____ %water _____ %mud _____

BHT 118° °F Gravity \_\_\_\_\_ °API D@ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API

RW .299 ° Chlorides 50 ppm Recovery Chlorides 32,000 ppm System Chlorides 1,800 ppm

(A) Initial Hydrostatic Mud	<u>2154</u> <u>2097</u> PSI	Recorder No. <u>2346</u>	T-Started <u>16:15 p.m.</u>
(B) First Initial Flow Pressure	<u>100</u> <u>24</u> PSI	(depth) <u>4303'</u>	T-Open <u>17:45 p.m.</u>
(C) First Final Flow Pressure	<u>100</u> <u>44</u> PSI	Recorder No. <u>11058</u>	T-Pulled <u>21:35 p.m.</u>
(D) Initial Shut-in Pressure	<u>895</u> <u>855</u> PSI	(depth) <u>4331'</u>	T-Out <u>23:40 p.m.</u>
(E) Second Initial Flow Pressure	<u>122</u> <u>47</u> PSI	Recorder No. _____	on loc <u>15:20 p.m.</u>
(F) Second Final Flow Pressure	<u>144</u> <u>85</u> PSI	(depth) _____	off loc <u>12:25 a.m.</u>
(G) Final Shut-in Pressure	<u>760</u> <u>724</u> PSI	Initial Opening <u>N</u>	Test <u>X</u>
(H) Final Hydrostatic Mud	<u>2143</u> <u>2037</u> PSI	Initial Shut-in <u>60</u>	Jars _____
	<u>NK-1</u> <u>AK-1</u>	Final Flow <u>40</u>	Safety Joint <u>X</u>
		Final Shut-in <u>120</u>	Straddle _____

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.

Approved By [Signature]  
 Our Representative Shane M. Beard

Circ. Sub x N/C  
 Sampler \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Elect. Rec. X  
 Other \_\_\_\_\_  
 TOTAL PRICE \$ \_\_\_\_\_

TRILOBITE TESTING L.L.C.

OPERATOR : Mull Drilling Co.

DATE 2-24-00

WELL NAME: Graeff #2

KB 2774.00 ft

TICKET NO: 11189 DST #6

LOCATION : 9-17-28 Lane co KS

GR 2766.00 ft

FORMATION: Marm/altamot

INTERVAL : 4335.00 To 4425.00 ft

TD 4425.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF 10	Rec.	11058	11058	2346			PF Fr. 1355 to 1405 hr
SI 60	Range (Psi )	4475.0	4475.0	4995.0	0.0	0.0	IS Fr. 1405 to 1505 hr
SF 40	Clock (hrs)	12	12	alpin			SF Fr. 1505 to 1545 hr
FS 120	Depth (ft )	4420.0	4420.0	4358.0	0.0	0.0	FS Fr. 1545 to 1745 hr

	Field	1	2	3	4	
A. Init Hydro	2244.0	2206.0	2136.0	0.0	0.0	T STARTED 1245 hr
B. First Flow	122.0	137.0	37.0	0.0	0.0	T ON BOTM 1353 hr
B1. Final Flow	122.0	135.0	60.0	0.0	0.0	T OPEN 1355 hr
C. In Shut-in	1108.0	1106.0	1079.0	0.0	0.0	T PULLED 1745 hr
D. Init Flow	133.0	155.0	72.0	0.0	0.0	T OUT 2000 hr
E. Final Flow	166.0	171.0	114.0	0.0	0.0	
F. Fl Shut-in	1075.0	1073.0	1049.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2233.0	2218.0	2133.0	0.0	0.0	Tool Wt. 5000.00 lbs
Inside/Outside	i	i	o			Wt Set On Packer 26000.00 lbs
						Wt Pulled Loose 56000.00 lbs
						Initial Str Wt 42000.00 lbs
						Unseated Str Wt 0.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.50 in
						D.C. Length 30.00 ft
						D.P. Length 4349.00 ft

RECOVERY

Pot Fluid 210.00 ft of 30.00 ft in DC and 180.00 ft in DP  
 390.00 ft of Gas in pipe.  
 210.00 ft of Gassy oil cut mud  
 0.00 ft of 205 gas 15% oil 65% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

Initial Flow:  
 Bottom of bucket in 10 minutes.  
 Initial Shut-In:  
 No return.  
 Final Flow:  
 Bottom of bucket in 1 minute.  
 Final Shut-In:  
 Bled off 1 1/2 minute. Return in 5 minutes. Weak surface blow died in 40 minutes.

SAMPLES:  
 SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.30 lb/cf
Vis.	48.00 S/L
W.L.	7.60 in3
F.C.	0.00 in
Mud Drop N	
Amt. of fill	0.00 ft
Btm. H. Temp.	115.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Shane McBride
Co. Rep.	Kim Shoemaker
Contr.	Discovery
Rig #	1
Unit #	
Pump T.	

Test Successful: Y

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Graeff #2

LOCATION : 9-17-28 Lane co KS

TICKET No. 11189 D.S.T. No. 6 DATE 2-24-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 29

TOTAL TOOL ..... 51

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.	Stands	Single	Total
-------------------	--------	--------	-------

D.P. ANCHOR STND.	Stands	1	Single	Total	61
-------------------	--------	---	--------	-------	----

TOTAL ASSEMBLY ..... 112

D.C. ABOVE TOOLS.	Stands	Single	1	Total	30
-------------------	--------	--------	---	-------	----

D.P. ABOVE TOOLS.	Stands	Single	Total	4288
-------------------	--------	--------	-------	------

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4430

TOTAL DEPTH ..... 4425

TOTAL DRILL PIPE ABOVE K.B. .... 5

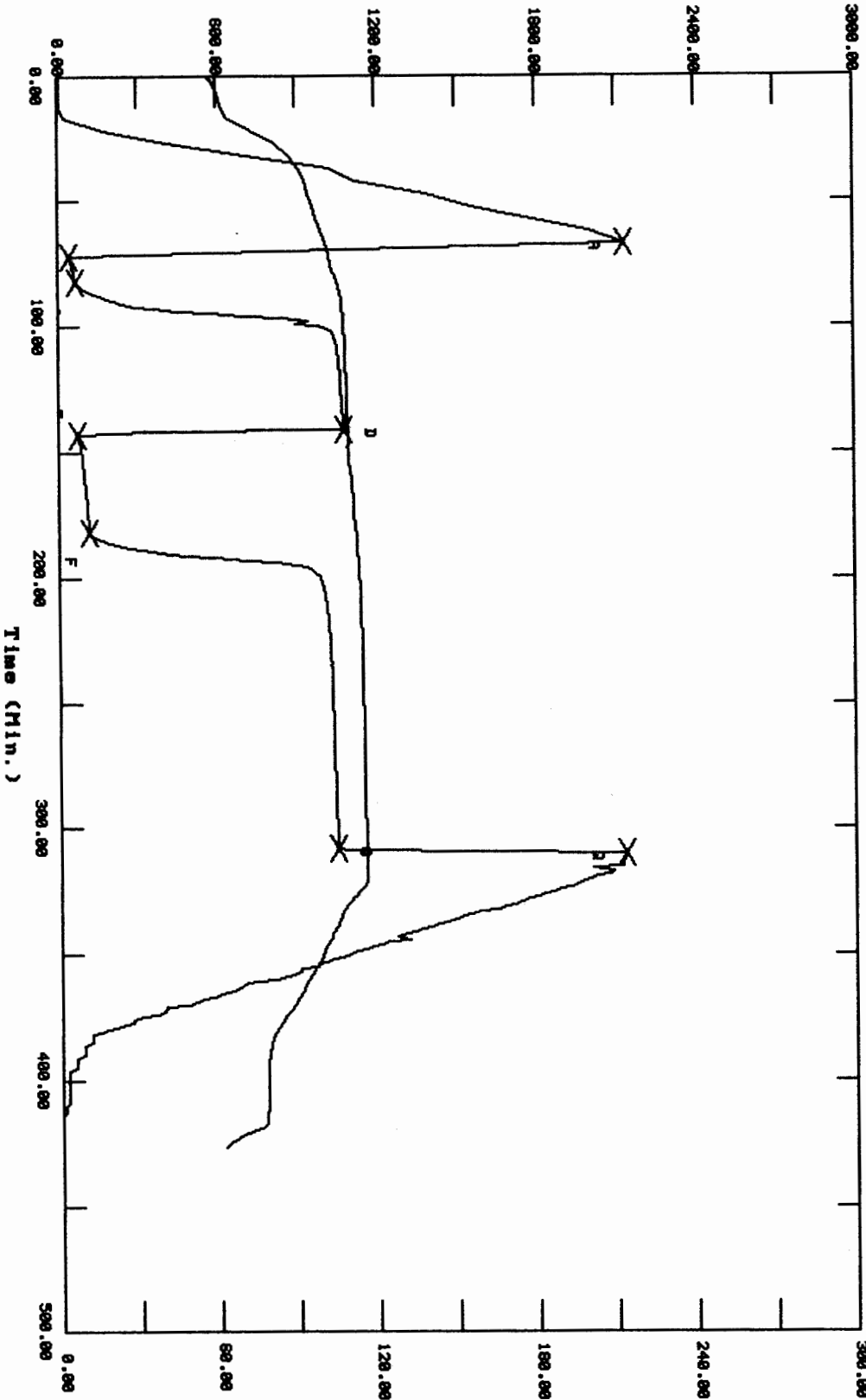
REMARKS:

P.O. SUB	
C.O. SUB 1'	4312
S.I. TOOL 5'	4318
HMV 5'	4323
JARS n/a	
SAFETY JOINT 2'	4325
PACKER top	4330
PACKER bottom	4335
DEPTH 4335	
1'	4336
ANCHOR 21'perf	4357
1' c.o.	4358
alpine recorder	4358
61' drillpipe	4419
1' c.o.	4420
ak-1 recorder	4420
BULLNOSE 5'bullplug	4425
T.D.	4425

# TEST HISTORY

Flag Points  
(Min.) PK Psig)

A1	0.00	2136.61
B1	0.00	37.70
C1	18.00	80.93
D1	59.00	1679.85
E1	0.00	72.56
F1	39.00	114.88
G1	126.00	1049.87
Q1	0.00	2133.95

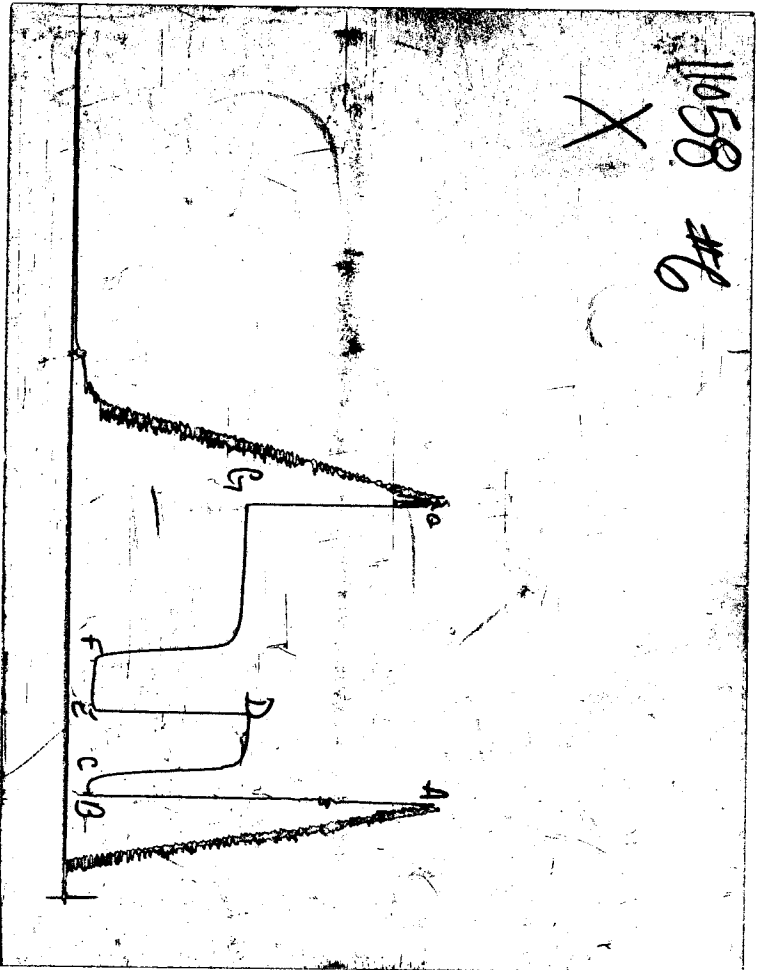


Pressure ( PSig )

Time (Min.)

Temperature (DEG F)

CHART PAGE



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

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 11189

Well Name & No. <u>Graeff #2</u>	Test No. <u>6</u>	Date <u>2-24-00</u>
Company <u>Mull Drilling Co.</u>	Zone Tested <u>main/Altament</u>	
Address <u>P.O. Box 2758 Wichita Ks 67201</u>	Elevation <u>2774</u> KB <u>2766</u> GL	
Co. Rep / Geo. <u>Kim Shoemaker</u>	Cont. <u>Dis #1</u>	Est. Ft. of Pay <u>    </u> Por. <u>    </u> %
Location: Sec. <u>9</u> Twp. <u>17</u> Rge. <u>28</u> Co. <u>LAWC</u> State <u>Ks</u>		
No. of Copies <u>Norm.</u> Distribution Sheet (Y, N) <u>    </u>	Turnkey (Y, N) <u>    </u>	Evaluation (Y, N) <u>    </u>

Interval Tested <u>4335'</u> <u>4425'</u>	Initial Str Wt./Lbs. <u>42,000</u>	Unseated Str Wt./Lbs. <u>45,000</u>
Anchor Length <u>90'</u>	Wt. Set Lbs. <u>26,000</u>	Wt. Pulled Loose/Lbs. <u>56,000</u>
Top Packer Depth <u>4330'</u>	Tool Weight <u>5,000</u>	
Bottom Packer Depth <u>4335'</u>	Hole Size — 7 7/8" <input checked="" type="checkbox"/>	Rubber Size — 6 3/4" <input checked="" type="checkbox"/>
Total Depth <u>4425'</u>	Wt. Pipe Run <u>    </u>	Drill Collar Run <u>30'</u>
Mud Wt. <u>9.3</u> LCM <u>0</u> Vis. <u>48</u> WL <u>7.6</u>	Drill Pipe Size <u>4 1/2 XH</u>	Ft. Run <u>4349'</u>
Blow Description <u>B.O.B in 10 min</u>		

No return  
B.O.B in 1 min.  
Bleed off 1 1/2 min return in 5 min Weak Surface blow died in 40 min.

Recovery — Total Feet <u>210'</u>	GIP <u>32'</u>	Ft. in DC <u>30'</u>	Ft. in DP <u>180'</u>
Rec. <u>210'</u> Feet Of <u>gassy oil cut mud</u>	%gas <u>20%</u>	%oil <u>15%</u>	%water <u>65%</u> %mud <u>    </u>
Rec. <u>    </u> Feet Of <u>    </u>	%gas <u>    </u>	%oil <u>    </u>	%water <u>    </u> %mud <u>    </u>
Rec. <u>    </u> Feet Of <u>    </u>	%gas <u>    </u>	%oil <u>    </u>	%water <u>    </u> %mud <u>    </u>
Rec. <u>    </u> Feet Of <u>    </u>	%gas <u>    </u>	%oil <u>    </u>	%water <u>    </u> %mud <u>    </u>

BHT 115° °F Gravity      °API D@      °F Corrected Gravity      °API

RW      °F Chlorides      ppm Recovery Chlorides 1500 ppm System

(A) Initial Hydrostatic Mud	<u>2244</u> <u>2136</u>	PSI	Recorder No. <u>2346</u>	T-Started <u>12:45 p.m.</u>
(B) First Initial Flow Pressure	<u>122</u> <u>37</u>	PSI	(depth) <u>4358'</u>	T-Open <u>13:55 p.m.</u>
(C) First Final Flow Pressure	<u>122</u> <u>60</u>	PSI	Recorder No. <u>11058</u>	T-Pulled <u>17:45 p.m.</u>
(D) Initial Shut-in Pressure	<u>1108</u> <u>1079</u>	PSI	(depth) <u>4420'</u>	T-Out <u>20:00 p.m.</u>
(E) Second Initial Flow Pressure	<u>133</u> <u>72</u>	PSI	Recorder No. <u>    </u>	<u>onloc 12:15 p.m.</u>
(F) Second Final Flow Pressure	<u>166</u> <u>114</u>	PSI	(depth) <u>    </u>	<u>offloc 20:35 p.m.</u>
(G) Final Shut-in Pressure	<u>1075</u> <u>1049</u>	PSI	Initial Opening <u>10</u>	Test <u>X</u>
(H) Final Hydrostatic Mud	<u>2233</u> <u>2133</u>	PSI	Initial Shut-in <u>60</u>	Jars <u>    </u>

AK-1 AK-1

Final Flow 40 Safety Joint X

Final Shut-in 120 Straddle     

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.

Approved By [Signature]

Our Representative [Signature]

Circ. Sub N/E

Sampler     

Extra Packer     

Elect. Rec X

Other     

TOTAL PRICE \$

TRILOBITE TESTING L.L.C.

OPERATOR : Mull Drilling Co.

DATE 2-25-00

WELL NAME: Graeff #2

KB 2774.00 ft

TICKET NO: 11190

DST #7

LOCATION : 9-17-28 Lane co KS

GR 2766.00 ft

FORMATION: ftscott, chero, johnso

INTERVAL : 4484.00 To 4550.00 ft

TD 4550.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	11058	11058	2346			PF Fr. 1308 to 1338 hr
SI 30 Range (Psi )	4475.0	4475.0	4995.0	0.0	0.0	IS Fr. 1338 to 1408 hr
SF 30 Clock (hrs)	12	12	alpin			SF Fr. 1408 to 1438 hr
FS 30 Depth (ft )	4545.0	4545.0	4485.0	0.0	0.0	FS Fr. 1438 to 1508 hr

	Field	1	2	3	4	
A. Init Hydro	2278.0	2289.0	2248.0	0.0	0.0	T STARTED 1125 hr
B. First Flow	66.0	73.0	33.0	0.0	0.0	T ON BOTM 1305 hr
B1. Final Flow	66.0	68.0	36.0	0.0	0.0	T OPEN 1308 hr
C. In Shut-in	77.0	84.0	50.0	0.0	0.0	T PULLED 1508 hr
D. Init Flow	55.0	73.0	38.0	0.0	0.0	T OUT 1720 hr
E. Final Flow	55.0	67.0	38.0	0.0	0.0	
F. Fl Shut-in	66.0	72.0	46.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2266.0	2280.0	2223.0	0.0	0.0	Tool Wt. 5000.00 lbs
Inside/Outside	i	I	o			Wt Set On Packer 26000.00 lbs
						Wt Pulled Loose 60000.00 lbs
						Initial Str Wt 43000.00 lbs
						Unseated Str Wt 43000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.50 in
						D.C. Length 30.00 ft
						D.P. Length 4473.00 ft

RECOVERY

Tot Fluid 10.00 ft of 10.00 ft in DC and 0.00 ft in DP  
 10.00 ft of drilling mud w/spots of oil  
 0.00 ft of 100% oil  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

Initial Flow:  
 Weak 1/2" blow died in 25 minutes.  
 Initial Shut-In:  
 No return  
 Final Flow:  
 No blow.  
 Final Shut-In:  
 No return.

MUD DATA-----	
Mud Type	Chemical
Weight	9.30 lb/cf
Vis.	53.00 S/L
W.L.	7.20 in3
F.C.	0.00 in
Mud Drop N	
Amt. of fill	0.00 ft
Btm. H. Temp.	113.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Shane McBride
Co. Rep.	Kim Shoemaker
Contr.	Discovery
Rig #	1
Unit #	
Pump T.	

SAMPLES:

SENT TO:

Test Successful: Y

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Graeff #2

LOCATION : 9-17-28 Lane co KS

TICKET No. 11190 D.S.T. No. 7 DATE 2-25-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 36

TOTAL TOOL ..... 58

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single 1 Total 30

TOTAL ASSEMBLY ..... 88

D.C. ABOVE TOOLS.Stands Single 1 Total 30

D.P. ABOVE TOOLS.Stands Single Total 4442

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4560

TOTAL DEPTH ..... 4550

TOTAL DRILL PIPE ABOVE K.B. .... 10

REMARKS:

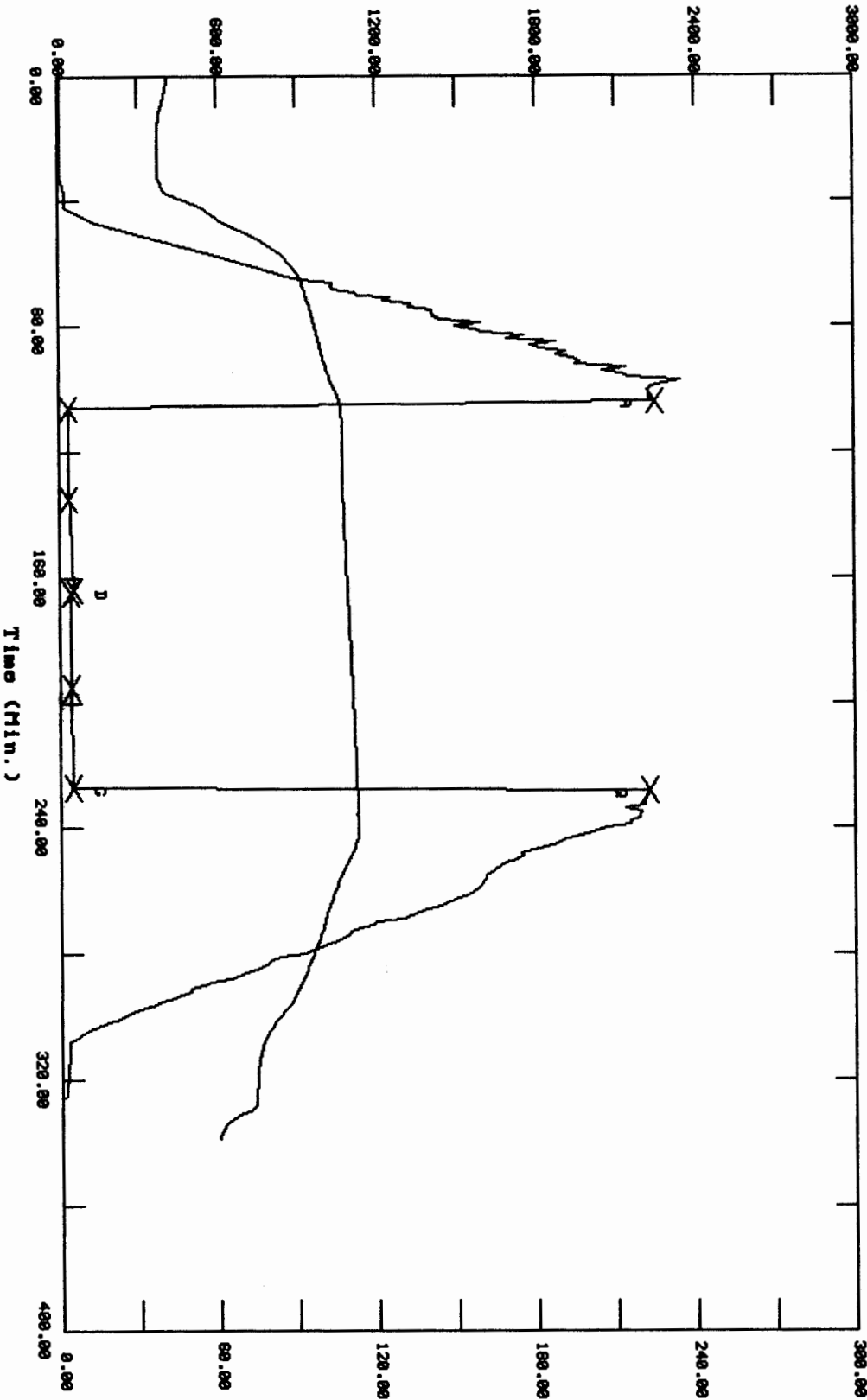
P.O. SUB	
C.O. SUB 1'	4461
S.I. TOOL 5'	4467
HMV 5'	4472
JARS n/a	
SAFETY JOINT 2'	4474
PACKER top	4479
PACKER bottom	4484
DEPTH 4484	
1'	4485
ANCHOR alpine recorder	4485
28' perf	4513
1' c.o.	4514
30' drillpipe	4544
1' c.o.	4545
ak-1 recorder	4545
BULLNOSE 5' bullplug	4550
T.D.	4550

11190 DST #7 Graeff #2 Hull Drilling Co.

# TEST HISTORY

Flag Points

(Min.)	PK	PSig)
R1	0.00	2248.24
B1	0.00	33.17
C1	29.00	36.55
D1	29.00	50.69
E1	0.00	38.88
F1	30.00	38.79
G1	32.00	46.31
Q1	0.00	2223.83

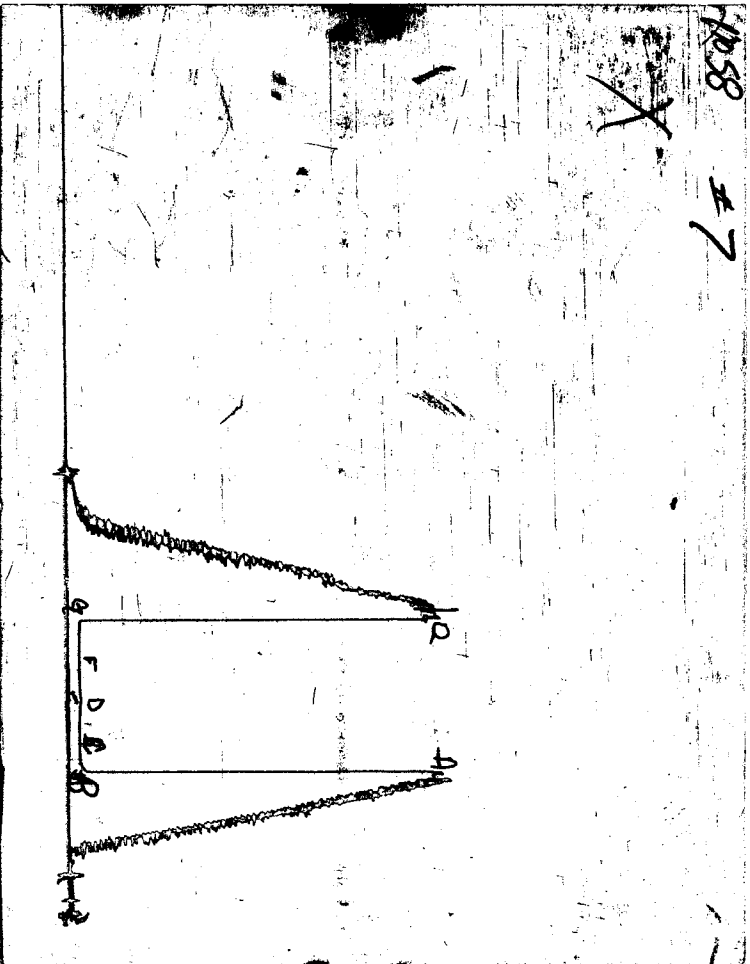


Pressure ( PSig)

Temperature (DEG F)

Time (Min.)

CHART PAGE



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