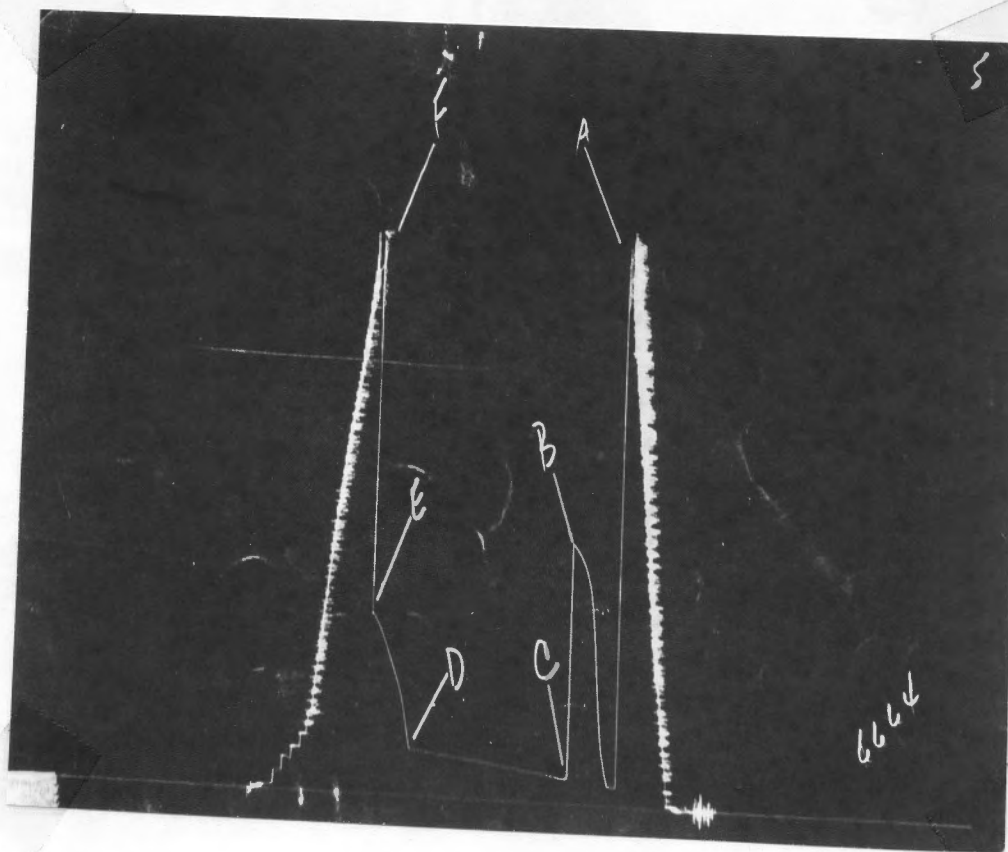
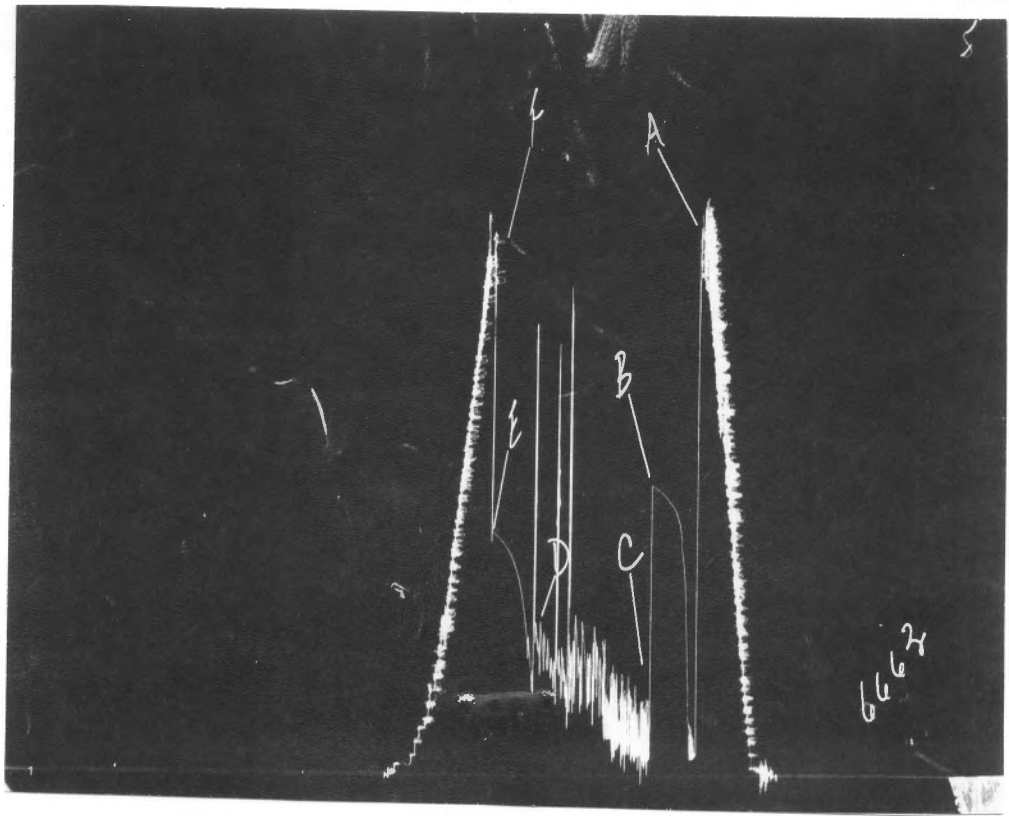


Pressure: Each Square



Tool Open 2 hr 5 mins: Shut-in: Initial hr 30 mins: Final hr 30 min

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	2345	2460
(B) Initial Shut-in Pressure	1175	1185
(C) Initial Flow Pressure	105	90
(D) Final Flow Pressure	235	215
(E) Final Shut-in Pressure	820	820
(F) Final Hydrostatic Pressure	2320	2420



MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company MILL DRILLING COMPANY

Lease and Well No. MENAIR # 1

County NESS State KANSAS Date AUGUST 25, 1963

Formation Test No.	<u>1</u>	Total Depth	<u>4390</u>
Interval Tested	<u>4308</u>	To	<u>4390</u>
		Anchor Length	<u>82'</u>
Size Hole	<u>7 7/8</u>	Size Drill Pipe	<u>4 1/2 FH</u>
		Size Packer	<u>6 3/4</u>
Mud Weight	<u>10.3</u>	Viscosity	<u>49</u>
		Bottom Hole Temp	<u>114</u> ° F
Chokes: Top	<u>1/2</u>	Bottom	<u>1/2</u>
		Ticket No.	<u>6664</u>

RECOVERY

GOOD BLOW THROUGHOUT TEST

1260 FEET OF GAS IN DRILL PIPE
180 FEET CLEAN GASSY OIL
90 FEET VERY HEAVY OIL AND GAS CUT FROGGY OIL
30 FEET VERY HEAVY OIL CUT MUD
90 FEET OIL CUT MUD
15 FEET MUDDY WATER

Lease and Well No.

MENAIR # 1

32 20 24

C NE NE

Formation Test No.

1

COMPANY MULL DRILLING COMPANY DATE AUGUST 26, 1963

LEASE MCNAIR WELL NO. # 1 TEST NO. #1 TICKET NO. 6664

	TIME	PSI
INITIAL HYDRO MUD PRESSURE	-----	2460
INITIAL CLOSED IN PRESSURE	30 MINUTES	1185
INITIAL FLOW	-----	90
FINAL FLOW	120 MINUTES	215
FINAL CLOSED IN PRESSURE	30 MINUTES	820
FINAL HYDRO MUD PRESSURE	-----	2420

TOTAL DEPTH 4390

PACKER DEPTH 4308

BT. NO. 1049 DEPTH 4385

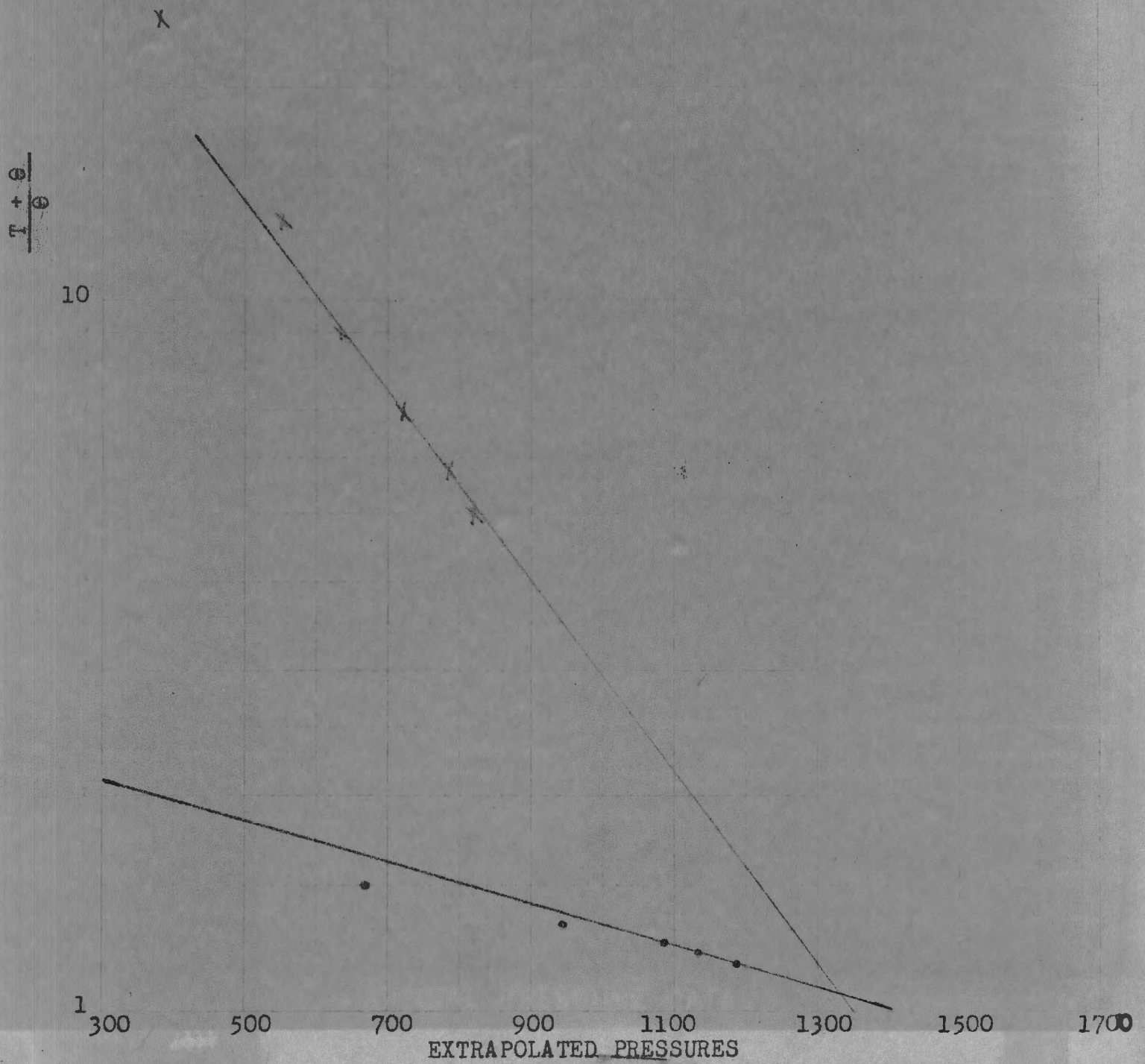
	1ST FLOW PRESSURE		INITIAL CIP		2ND FLOW PRESSURE		FINAL CIP	
	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.
P0	.000	90	.000	90	.000	117	.000	215
P1	.042	90	.042	285	.167	135	.042	380
P2			.083	670	.333	152	.083	552
P3			.125	945	.500	170	.125	635
P4			.167	1085	.666	190	.167	720
P5			.209	1135	.833	200	.209	785
P6			.250	1185	.999	215	.250	820
P7								
P8								
P9								
P10								
	5	MINUTE INTERVAL	5	MINUTE INTERVAL	20	MINUTE INTERVAL	5	MINUTE INTERVAL

REMARKS _____

SPECIAL PRESSURE DATA

DST # 2

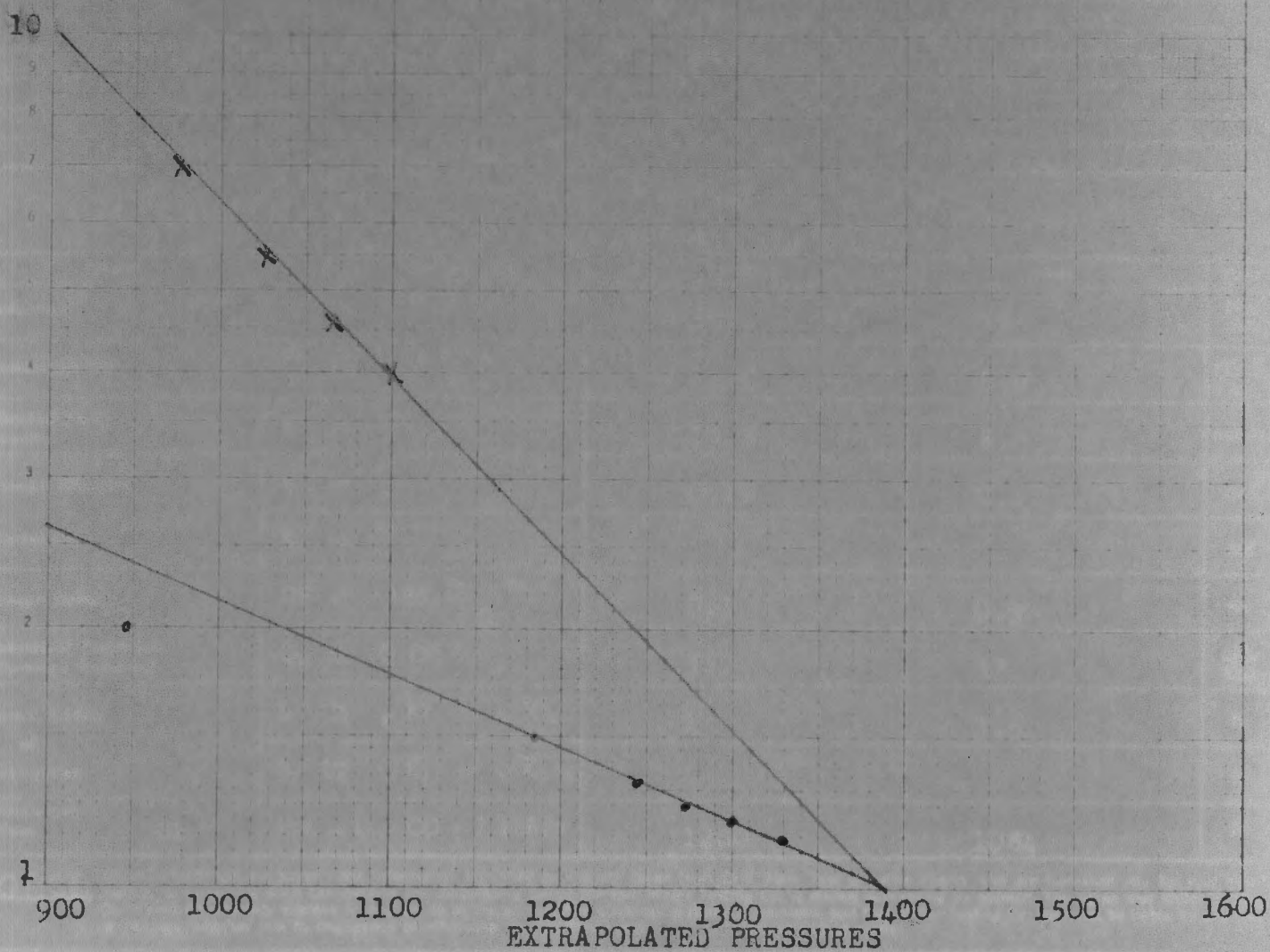
• INITIAL
x FINAL



$\frac{P}{P_0 + P_0}$

DST # 1

• INITIAL
x FINAL



Liquid Production

B.T. Gauge Numbers		1049	Ticket Number	6664
Initial Hydrostatic		2460 PRESSURE	Elevation	DF 2338 ft.
Final Hydrostatic		2420	Indicated Production	1st Flow 357 bbls. day
1st Flow	Initial	90	Total Flow	50 bbls. day
	Final	90	Drill Collar Length	210 ft.
Initial Closed In Pressure		30	Drill Collar I.D.	2.76 in.
2nd Flow	Initial	90	Drill Pipe Factor	.0142 bbls. ft.
	Final	120	Hole Size	7 7/8 in.
Final Closed In Pressure		30	Footage Tested	82 ft.
Extrapolated Static Pressure	Initial	1400	Mud Weight	10.3 lbs. gal.
	Final	1350	Viscosity, Oil or Water	1.0 cp
Slope psi/cycle	Initial	3670	Oil API Gravity	40° @ 60° F
	Final	750	Water Specific Gravity	—

Remarks: The final closed in pressure had not leveled off enough for extrapolation. However, the data compared with DST # 1 so I believe these extrapolations are reliable.

SUMMARY

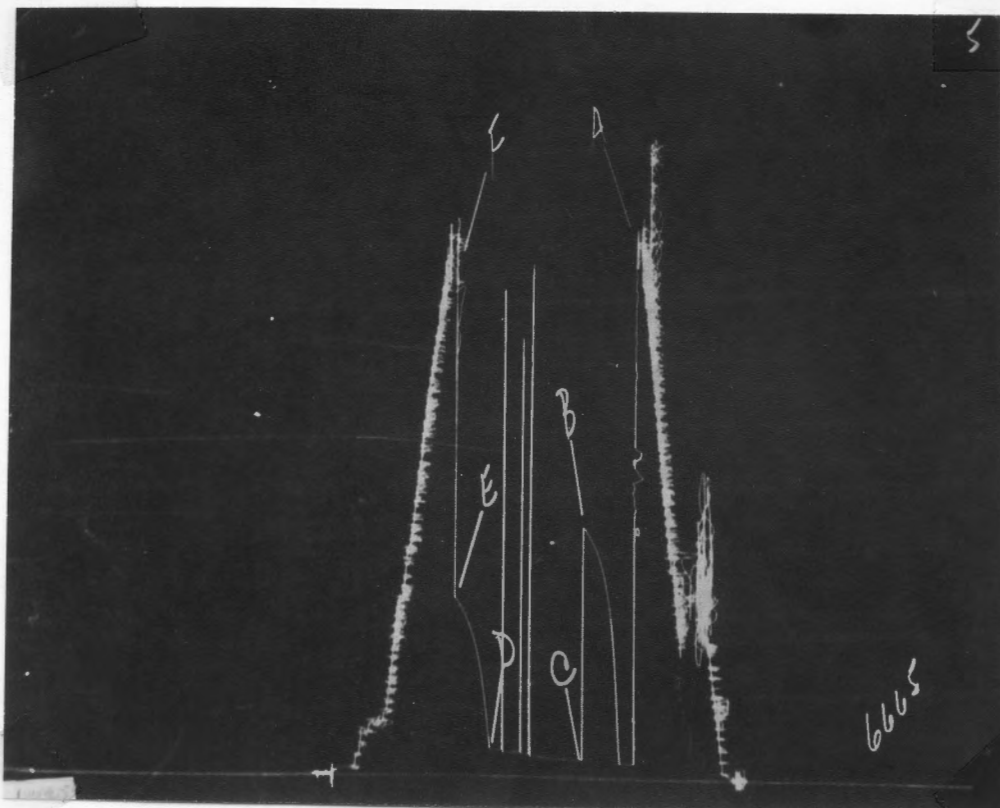
Gauge
No.
Depth

Product	Equation	INITIAL	FINAL	Units
Production	$Q = \frac{1440 R}{t}$	357	37	bbls. day
Transmissibility	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	15.8	8.0	md. ft. cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	15.8	8.0	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$	0.19	0.1	md.
	$K_i = \frac{Kh}{h_i}$			md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	0.1	0.3	—
Theoretical Potential w/Damage Removed	$Q_i = Q DR$	357	37	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt} \text{ or } \sqrt{Kt_0}$	1	3.5	ft.
	$b_i \approx \sqrt{K_i t} \text{ or } \sqrt{K_i t_0}$			ft.
Potentiometric Surface DF*	$Pot. = EI - GD + 2.319 P_s$	1200	1084	ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Miller Testing Co. is merely expressing its opinion. You agree that Miller Testing Co. makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Miller Testing Co. shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS

Pressure: Each Square _____ psi



Tool Open 1 hr. 25 mins: Shut-in: Initial _____ hr. 30 mins: Final _____ hr. 30 mins.

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	<u>2505</u>	<u>2450</u>
(B) Initial Shut-in Pressure	<u>1230</u>	<u>1155</u>
(C) Initial Flow Pressure	<u>75</u>	<u>80</u>
(D) Final Flow Pressure	<u>115</u>	<u>115</u>
(E) Final Shut-in Pressure	<u>815</u>	<u>730</u>
(F) Final Hydrostatic Pressure	<u>2485</u>	<u>2410</u>

MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company MULL DRILLING COMPANY

Lease and Well No. MCNAIR # 1

County NESS State KANSAS Date AUGUST 27, 1963

Formation Test No.	<u>2</u>	Total Depth	<u>4430</u>
Interval Tested	<u>4374</u>	To	<u>4430</u>
		Anchor Length	<u>56'</u>
Size Hole	<u>7 7/8</u>	Size Drill Pipe	<u>4 1/2 FH</u>
		Size Packer	<u>6 3/4</u>
Mud Weight	<u>10</u>	Viscosity	<u>46</u>
		Bottom Hole Temp	<u>122</u> ° F
Chokes: Top	<u>1/2</u>	Bottom	<u>1/2</u>
		Ticket No.	<u>6665</u>

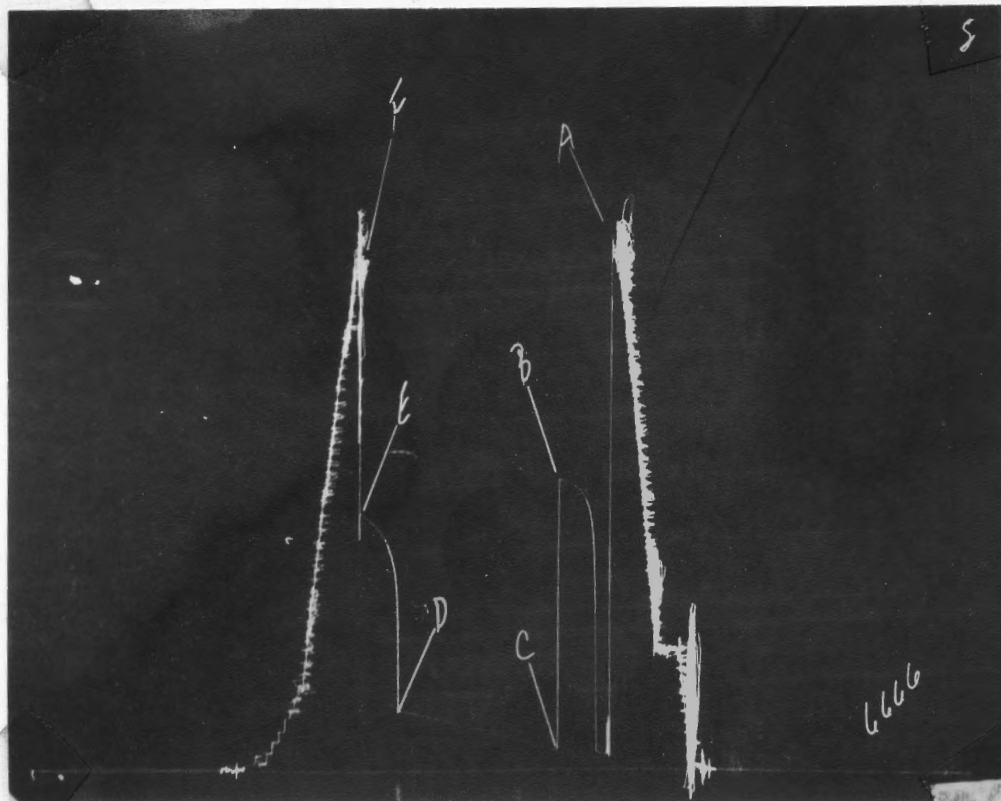
RECOVERY

WEAK BLOW FOR 38 MINUTES
FLUSHED TOOL IN 38, 48, AND 60 MINUTES

130 FEET OF SLIGHTLY OIL CUT MUD

Lease and Well No. MCNAIR # 1 32 20 24 C NE NE
Formation Test No. 2

Pressure: Each Square _____ psi

Tool Open 2 hr. 20 mins: Shut-in: Initial _____ hr. 30 mins: Final _____ hr. 30 mins.

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	<u>2520</u>	<u>2430</u>
(B) Initial Shut-in Pressure	<u>1340</u>	<u>1355</u>
(C) Initial Flow Pressure	<u>95</u>	<u>90</u>
(D) Final Flow Pressure	<u>275</u>	<u>275</u>
(E) Final Shut-in Pressure	<u>1195</u>	<u>1205</u>
(F) Final Hydrostatic Pressure	<u>2505</u>	<u>2410</u>

MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company MULL DRILLING COMPANY

Lease and Well No. MCNAIR # 1

County NESS State KANSAS Date AUGUST 27, 1963

Formation Test No.	<u>3</u>	Total Depth	<u>4450</u>		
Interval Tested	<u>4427</u>	To	<u>4450</u>	Anchor Length	<u>23'</u>
Size Hole	<u>7 7/8</u>	Size Drill Pipe	<u>4 1/2 FH</u>	Size Packer	<u>6 3/4</u>
Mud Weight	<u>10</u>	Viscosity	<u>46</u>	Bottom Hole Temp.	<u>124</u> ° F
Chokes: Top	<u>1/2</u>	Bottom	<u>1/2</u>	Ticket No.	<u>6666</u>

RECOVERY

GOOD BLOW THROUGHOUT TEST

575 FEET OIL CUT MUDDY WATER

Lease and Well No.

MCNAIR # 1

32 20 24

C NE NE

Formation Test No.

3