Ob. W.

PUMPING TEST DATA

Location: OBS. well Date: 7- -81

Pumped Well:

Depth 190 ft. Casing To 140 ft. Diameter 2 in.

Casing 0 to 142 ft. Diameter 2 in.

Disc. Pipe Diameter N/A in. Orifice Diameter N/A in.

Q N/A gpm.

Observation Wells:

Depth: 1=____ft. 2=____ft. 3=____ft. 4=____ft.

Casing Diameter: 1=____in. 2=____in. 3=____in. 4=____in.

Casing To: 1=____ft. 2=____ft. 3=____ft. 4=____ft.

Dist.(r): 1=____ft. 2=____ft. 3=____ft. 4=____ft.

Screen: 1=____to____ft. 2=____to____ft. 3=____to____ft.

Screen Diameter: 1=____in. 2=____in. 3=____in. 4=____in.

Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
			Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
0	0			0			
10:41	1			1.61			
	3			2.11			
	5			2.32			
	6			2.90			
	7			2.88			
	8			2.80			
	10			3.27			
	15			4.99			
	20			5.35			
	25			5.40			
	30			5.48			

P.W.

PUMPING TEST DATA

Location: Pumped Well Date: 7-15-81

Pumped Well:

Depth 190 ft. Casing To 140 ft. Diameter 6 in.

Casing 0 to 142 ft. Diameter 6 in.

Disc. Pipe Diameter 4 in. Orifice Diameter 3 in.

Q 85 90 gpm.

Observation Wells:

Depth: 1=_____ft. 2=_____ft. 3=_____ft. 4=_____ft.

Casing Diameter: 1=_____in. 2=_____in. 3=_____in. 4=_____in.

Casing To: 1=_____ft. 2=_____ft. 3=_____ft. 4=_____ft.

Dist.(r): 1=_____ft. 2=_____ft. 3=_____ft. 4=_____ft.

Screen: 1=_____to_____ft. 2=_____to_____ft. 3=_____to_____ft.

Screen Diameter: 1=_____in. 2=_____in. 3=_____in. 4=_____in.

Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
			Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
BEGINNING			TEST - 1st Step				
10:45	0	0	5.25'	below TOC			
10:48	2	.2	7.10'				
	3	.2	7.50'				
	5	.3	7.49'				
	6	.25	8.58'				
	7	.3	9.96'				
	8	.2	7.73'				
	9	.4	9.50'				
	10	.8	9.30'				
	15	1.6	19.26'				
	20	1.4	19.37'				

FOR MIKE KNAPP

9 F.B. # 55-RRR C-43 9/22/81

SEC. 10, T43S-R27E

ESTABLISHED ELEVATIONS ON NEW WELLS ON FRANK GREEN PROPERTY NORTH OF ALVA, FLA.

STA.	+	H.I	−	ELEV.
B.M. W.A.-125				19.67
	3.49 (3.78)	23.16		
TBM			4.62 (2.65)	18.54
TBM			4.59 (2.68)	18.57
TBM			4.41 (2.31)	18.75
TBM			4.96 (2.31)	18.20
TBM			4.94 (2.33)	18.22

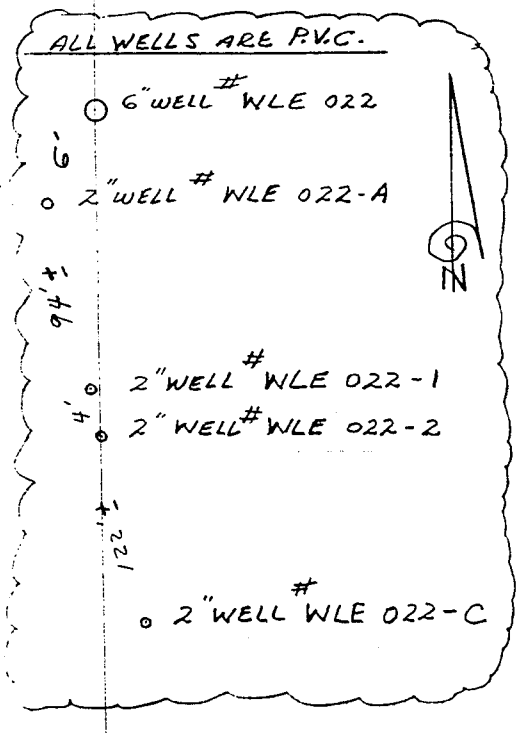
F.B. # 55-RRR C-43 9/22/81 9

INST: N.I.2 ZEIS LEVEL #12859

W A TANNER
& HOWARD
& MORRISSEY

TOP S.F.W.M.D. ALUM. CAP IN TOP OF W. SIDE OF CONC. BASE AROUND WELL # W.A. 125 (SEE PG. 4)

NOTE:
ALL TBM'S ARE PAINTED "X" CUTS IN TOP OF N. EDGE OF PVC PIPE.



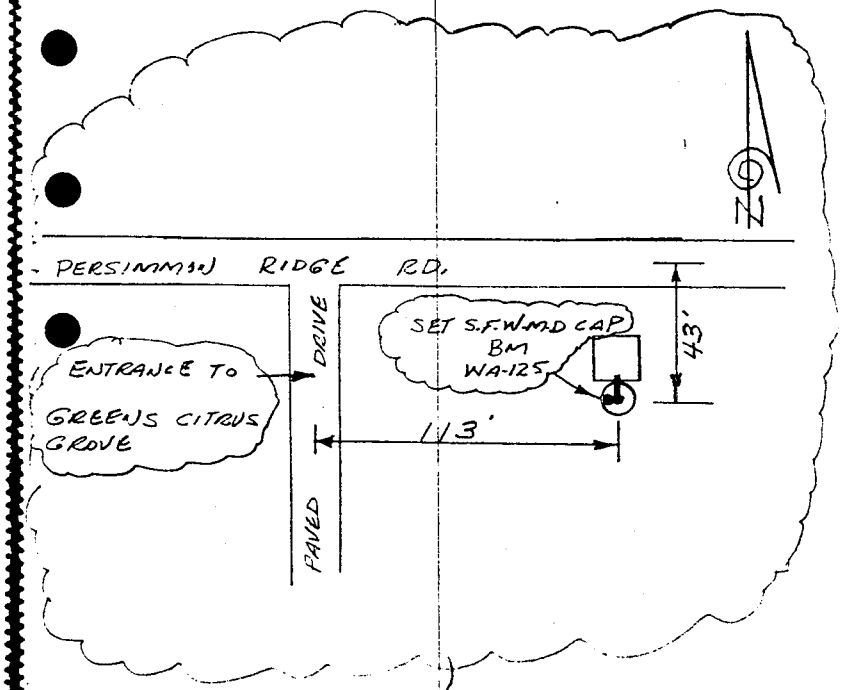
F.B. # 55-RRR C-43 9/21/81

CONT'D LEVELS FROM PG. 3

STA	+	H.I.	−	ELEV.
TP				20.53
	4.36 (2.91)	24.89		
TP			4.45 (2.82)	20.44
	4.91 (2.37)	25.35		
TP			4.60 (2.68)	20.75
	4.73 (2.55)	25.48		
TP			4.20 (3.07)	21.28
	3.97 (3.30)	25.25		
TP			4.44 (2.84)	20.81
	4.66 (2.61)	25.47		
TP			4.83 (2.44)	20.64
	4.36 (2.92)	25.00		
TP			4.92 (2.36)	20.08
	4.72 (2.56)	24.80		
TP			4.82 (2.45)	19.98
	4.78 (2.49)	24.76		
B.M. "W.A.-125"			5.09 (2.18)	19.67
	5.05 (2.22)	24.72		
TP			4.74 (2.53)	19.98
	4.89 (2.39)	24.87		
TP			4.65 (2.62)	20.22
	4.65 (2.63)	24.87		
TP			4.18 (3.10)	20.69

(CONT'D ... PG. 5)

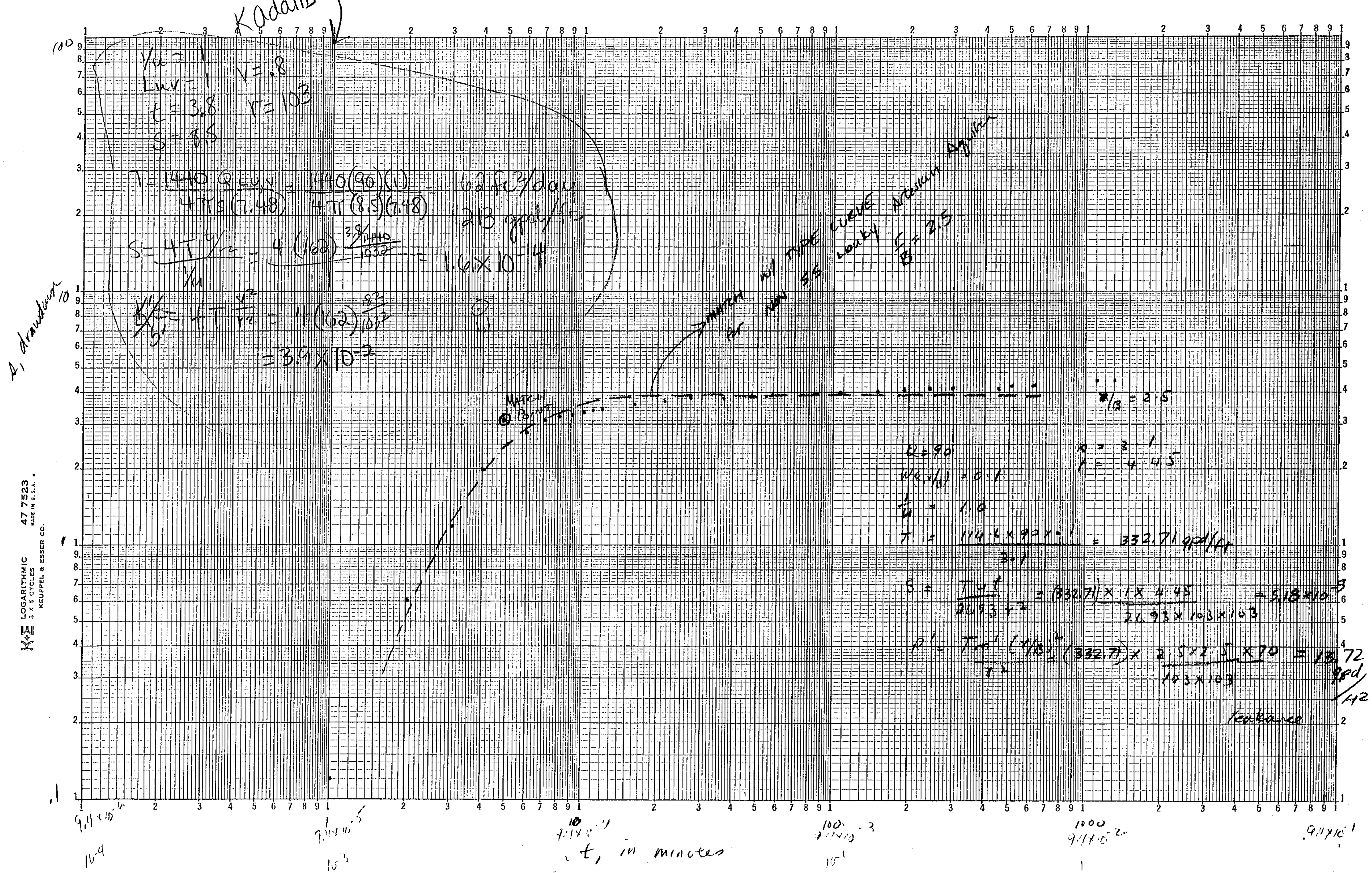
F.B. # 55-RRR C-43 9/21/81 4



TOP S.F.W.M.D. ALUM. CAP IN TOP OF W. SIDE OF CONC. BASE AROUND WELL # W.A.-125 ON FRANK GREEN PROP.

PAINTED SPOT IN PAVEMENT N. OF WELL # WLE-022-D

Observation Well



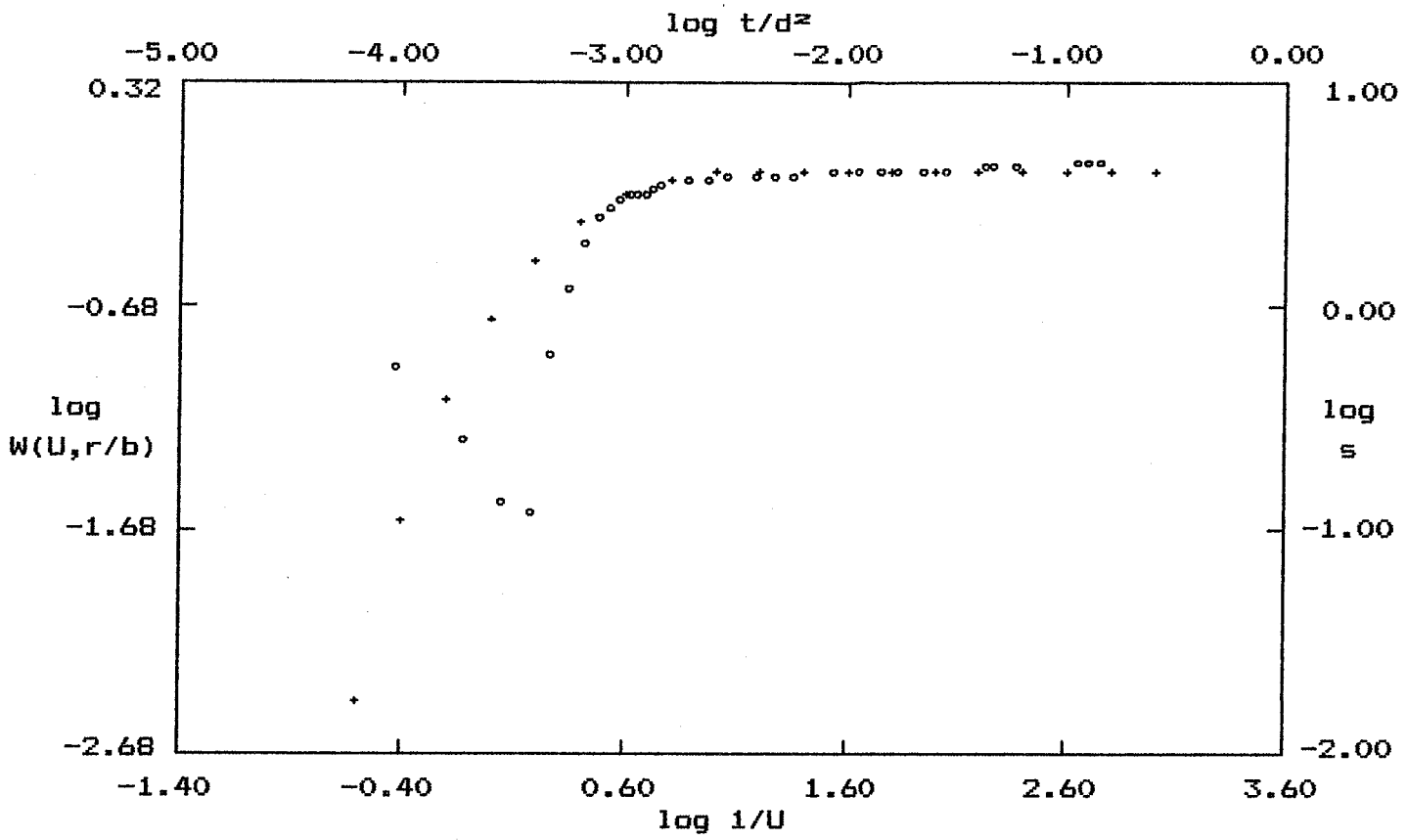
Ob. W.

	Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
				Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
.3118	449	453			4.09	1.246		
.3458	494	498			4.12	1.255		
.4277	600	620			4.18	1.274		
.7375	1062	1068						
.76875	1107	1201			4.31	1.3136		
.9145	1317	1321			4.32	1.316		
1.0194	1464	1468						
1.043	3:15	1503			4.29	1.307		
5'23		Pump SHut OFF (recovery)						
1508	3:24	1			2.63			
754.5		2			1.99			
		3			1.71			
		4			1.49			
		5			1.34			
		6			1.25			
		7			1.15			
		8			1.10			
		9			1.03			
		10			.96			
					.92			
					.90			
					.86			
		14			.83			
		15			.79			
		20			.69			
		25			.61			
		30			.53			
		40			.47			
		50			.49			
		60			.42			
		90			.36			
		120			.32			
		756			0.0			

Ob. W.

	Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
				Pumped	Obs. 1 DD	Obs. 2	Obs. 3	Obs. 4
		35			5.55			
		[illegible]	OWN	[illegible]	[illegible]	[illegible]		
		5			1.36			
		10			.43			
	2:[illegible]		START	PUMP				
.00069	2:13	1			.52	.1584 m		
.001388		2			.25	.0762		
.00208		3			.13	.0396		
.00277	1	4			.12	.0365		
.0034	2	5			.60	.1828		
.00416	3	6			1.18	.35596		
.00486	[illegible]	7			1.94	.5913		
.00555	5	8			2.48	.7559		
.00625	[illegible]	9			2.75	.8382		
.0069	[illegible]	10			3.09	.9418		
.0076	[illegible]	[illegible]			3.12	.95097		
.0083		[illegible]			3.19	.9723		
.009					3.23	.9845		
.0097		14			3.35	1.021		
.0104	[illegible]	15			3.40	1.036		
.0138	16	20			3.57	1.088		
.0173	21	25			3.67	1.118		
.0208	26	30			3.72	1.138		
.0277	36	40			3.72	1.138		
.0347	46	50			3.80	1.158		
.0416	56	60			3.83	1.167		
.0625	86	90			3.91	1.191		
.0833	116	120			3.92	1.1948		
.1041	146	150			3.98	1213		
.125	[illegible]	180			3.98	1.213		
.1666	236	240			4.01	1.222		
.2083	296	300			4.02	1.225		

PUMP TEST DATA



o - Data

\+ - Type Curve
Confined Leaky: r/B = 1.00

SOLUTION

Transmissivity = 2.000E-01 ft.²/min. = 2155 gpd/ft
Storativity = 2.010E-04

Green

WMD TAPENO 6062 PLOT NO 0008
USER NO KADAMS DATE 88/03/08 TIME 21:43

FRANK GREEN RECOVERY

OBSERVATION WELL: 1

R= 103 Q= 90

TIME IN MINUTES

TENTHS | TENS | HUNDREDS | THOUSANDS

DRAWDOWN IN FEET

0.00 | 0.50 | 1.00 | 1.50 | 2.00 | 2.50 | 3.00

$\Delta s = .43$

$T = \frac{264Q}{\Delta s}$

$= \frac{(264)(90)}{.43}$

$=$

$T = \frac{264Q}{\Delta s}$

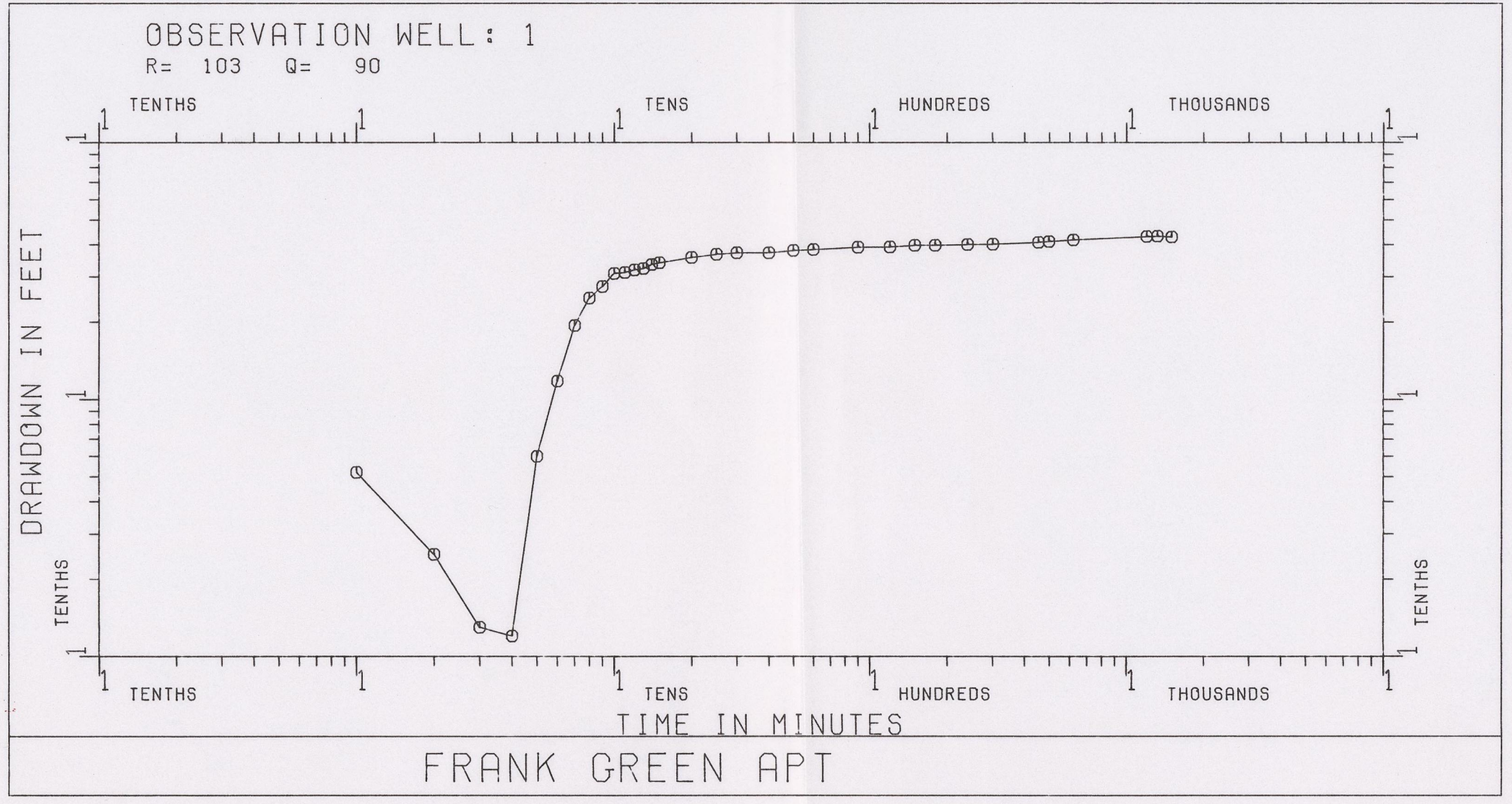
$= \frac{(264)(90)}{1.76}$

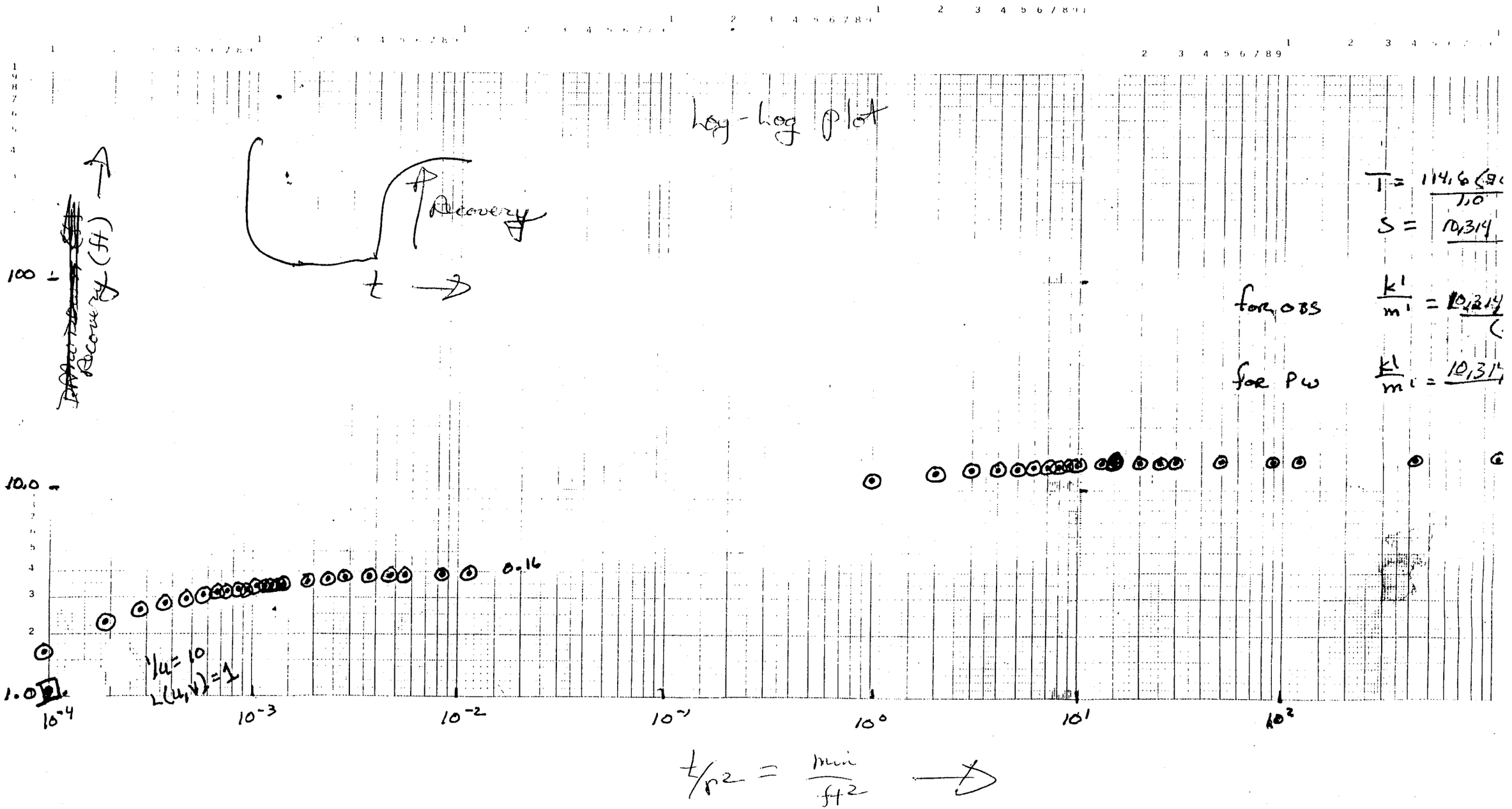
$=$

$\Delta s = 1.76$

2.26

WMO TAPENO 6062 PLOT NO 0005
USER NO KADAMS DATE 88/03/08 TIME 21:43




Log-log plot
Recovery (ft)
Recovery
t →
100
10.0
1.0
0.16
1/u = 10
L(u,v) = 1
10⁻⁴
10⁻³
10⁻²
10⁻¹
10⁰
10¹
10²
t/r² = min/ft² →
T = 114,6 (9
1,0
S = 10,314
for obs k'/m' = 10,214
for Pw k'/m' = 10,31

$B = 643$

$r/B = \frac{103}{643} = 0.16$

$r/B = \frac{1}{643} = 0.00016$

$$T = \frac{114.6(90)}{1.0}\,1 = 10{,}314 \text{ gpd/ft}$$

$$S = \frac{10{,}314\ (0.1)\ 1.0\times10^{-4}}{1.87}\ \frac{\text{Day}}{1440 \text{ min}} = 3.83 \times 10^{-5}$$

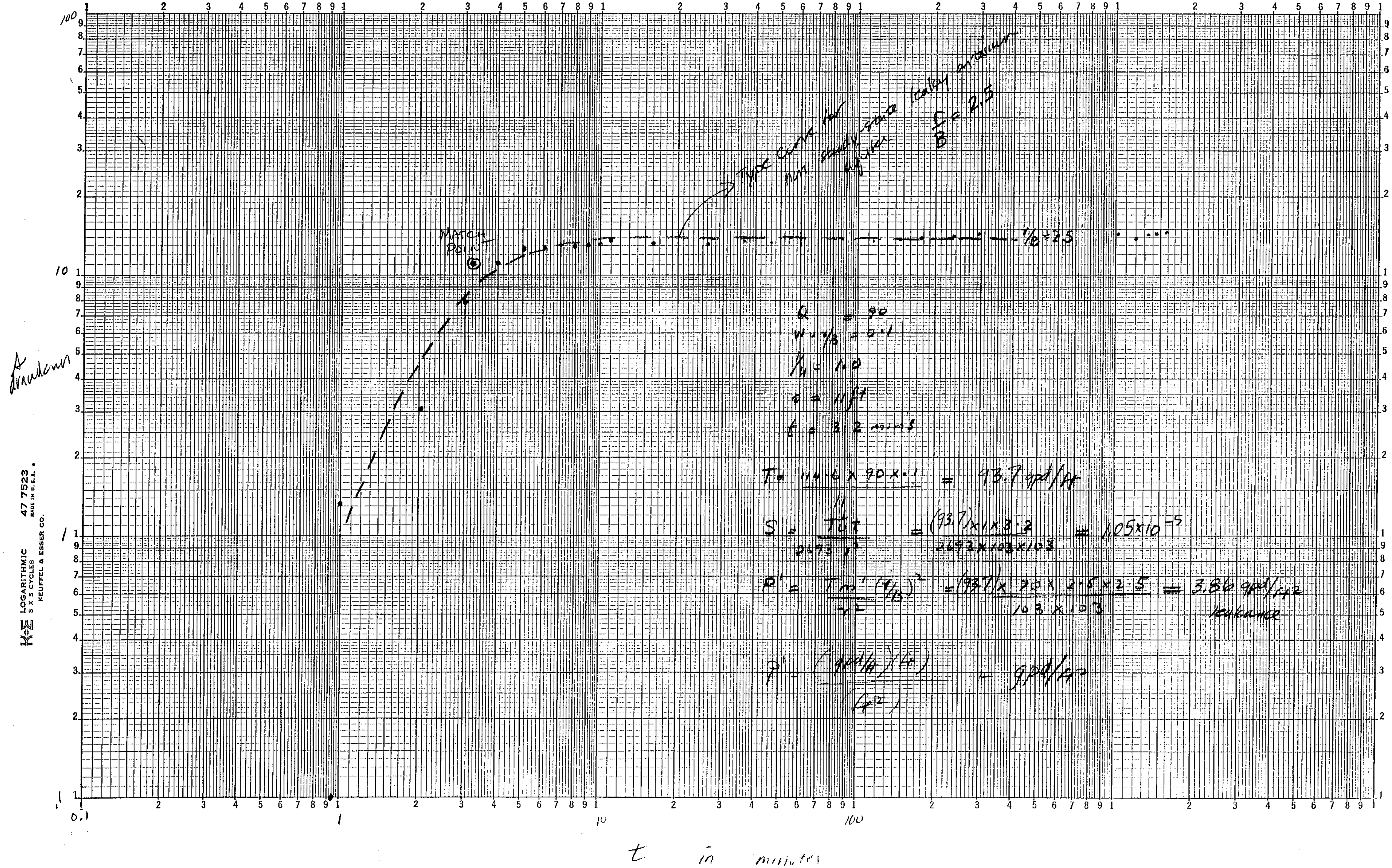
for OBS $\quad \frac{k'}{m'} = \frac{10{,}314\ (0.16)^2}{(103)^2} = 0.0249 \text{ gpd/ft}^3$

for Pw $\quad \frac{k'}{m'} = \frac{10{,}314\ (0.0016)^2}{(1)^2} = 0.0264 \text{ gpd/ft}^3$

0.00016

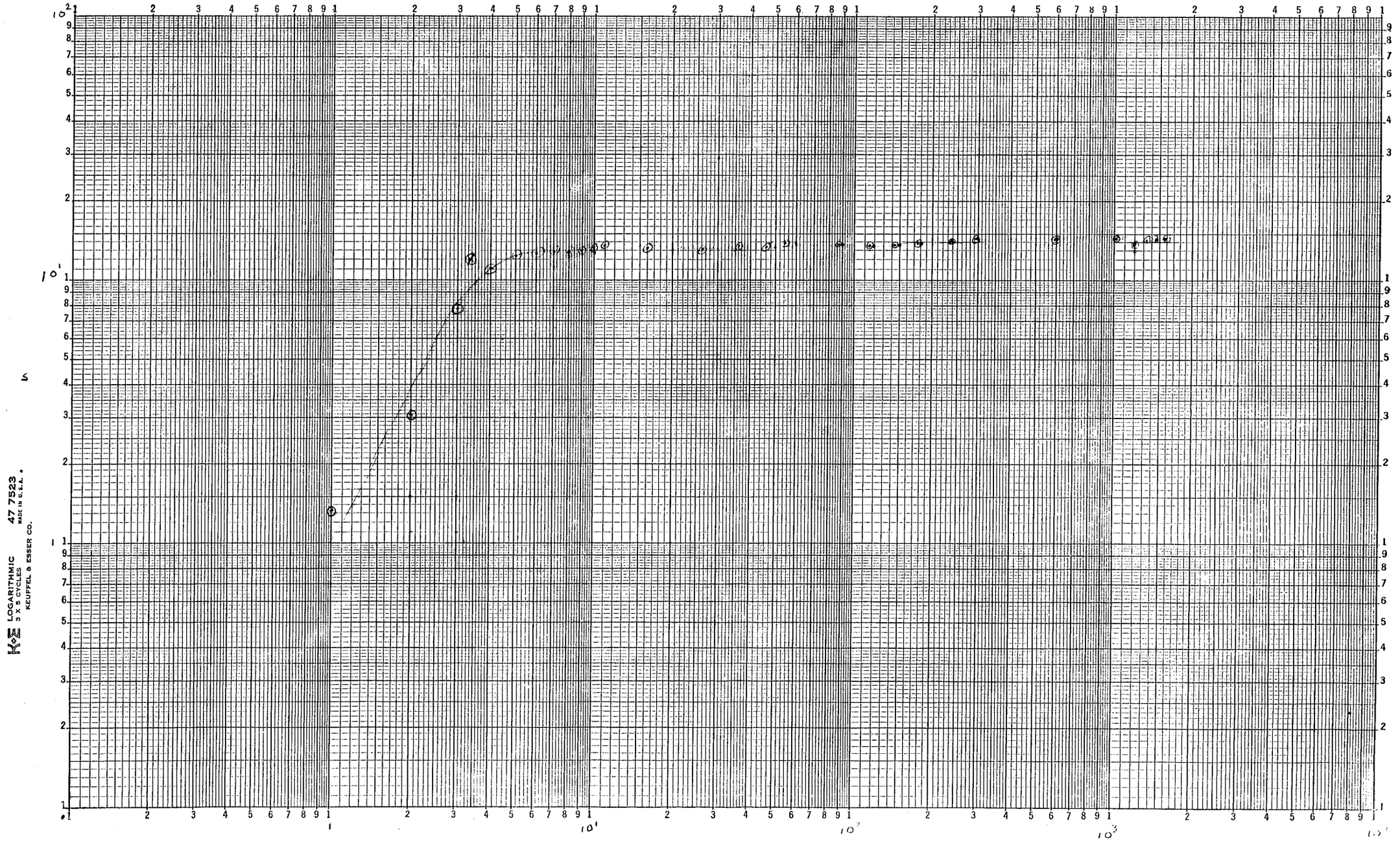
10^0 $\quad 10^1$ $\quad 10^2$

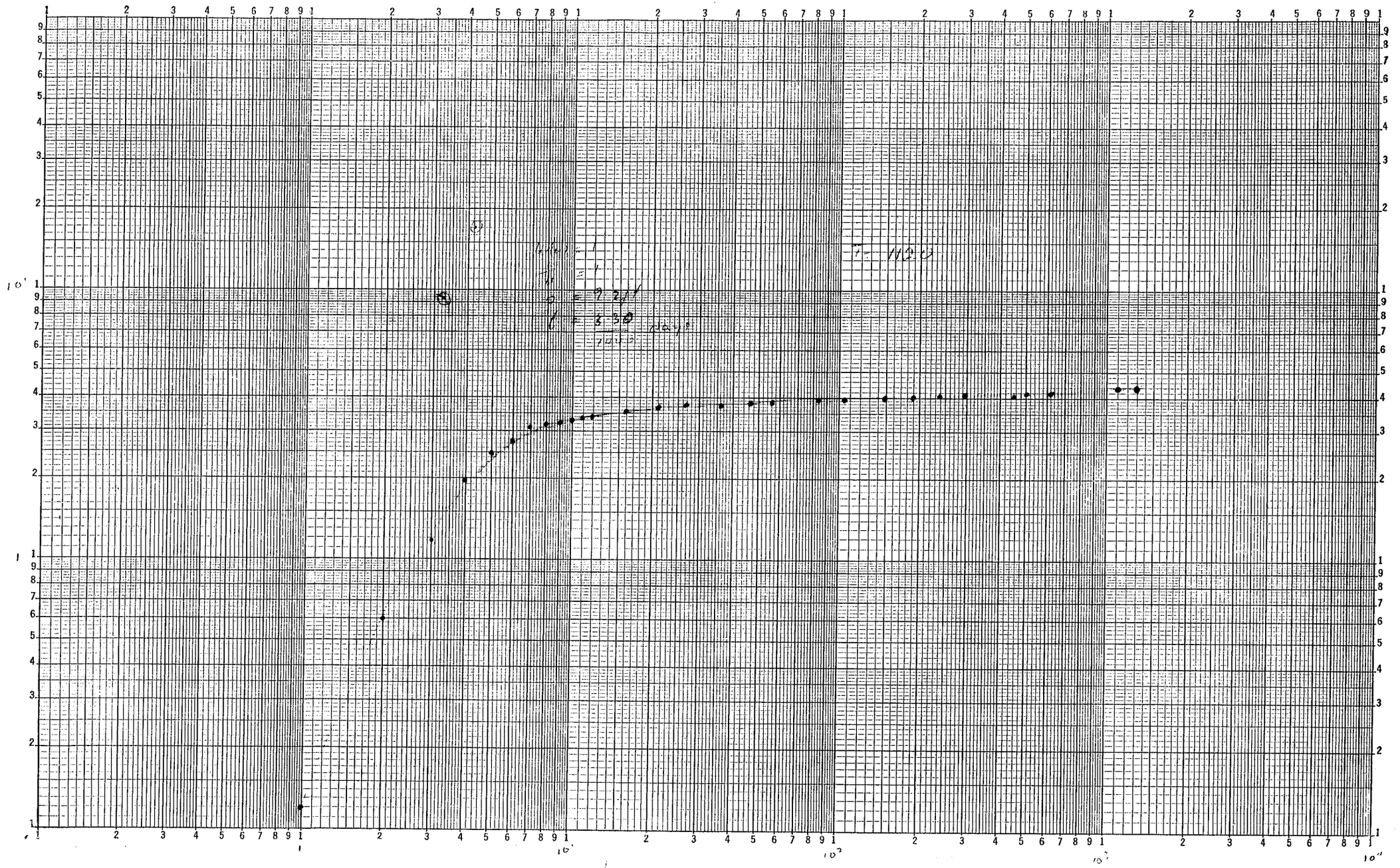
PUMPED WELL



drawdown
t in minutes
MATCH POINT
Type curve for non-steady-state leaky aquifer
r/B = 2.5
1/u = 2.5
Q = 90
W(u, r/B) = 0.1
1/u = 1.0
s = 11 ft
t = 3.2 mins
T = 114.6 x 90 x .1 / 11 = 93.7 gpd/ft
S = Tut / 2693 r² = (93.7) x 1 x 3.2 / 2693 x 103 x 103 = 1.05 x 10⁻⁵
P' = Tm'(r/B)² / r² = (93.7) x 90 x 2.5 x 2.5 / 103 x 103 = 3.86 gpd/ft²
leakance
P' = (gpd/ft)(ft) / (ft²) = gpd/ft²
LOGARITHMIC 3 X 5 CYCLES KEUFFEL & ESSER CO. 47 7523 MADE IN U.S.A.

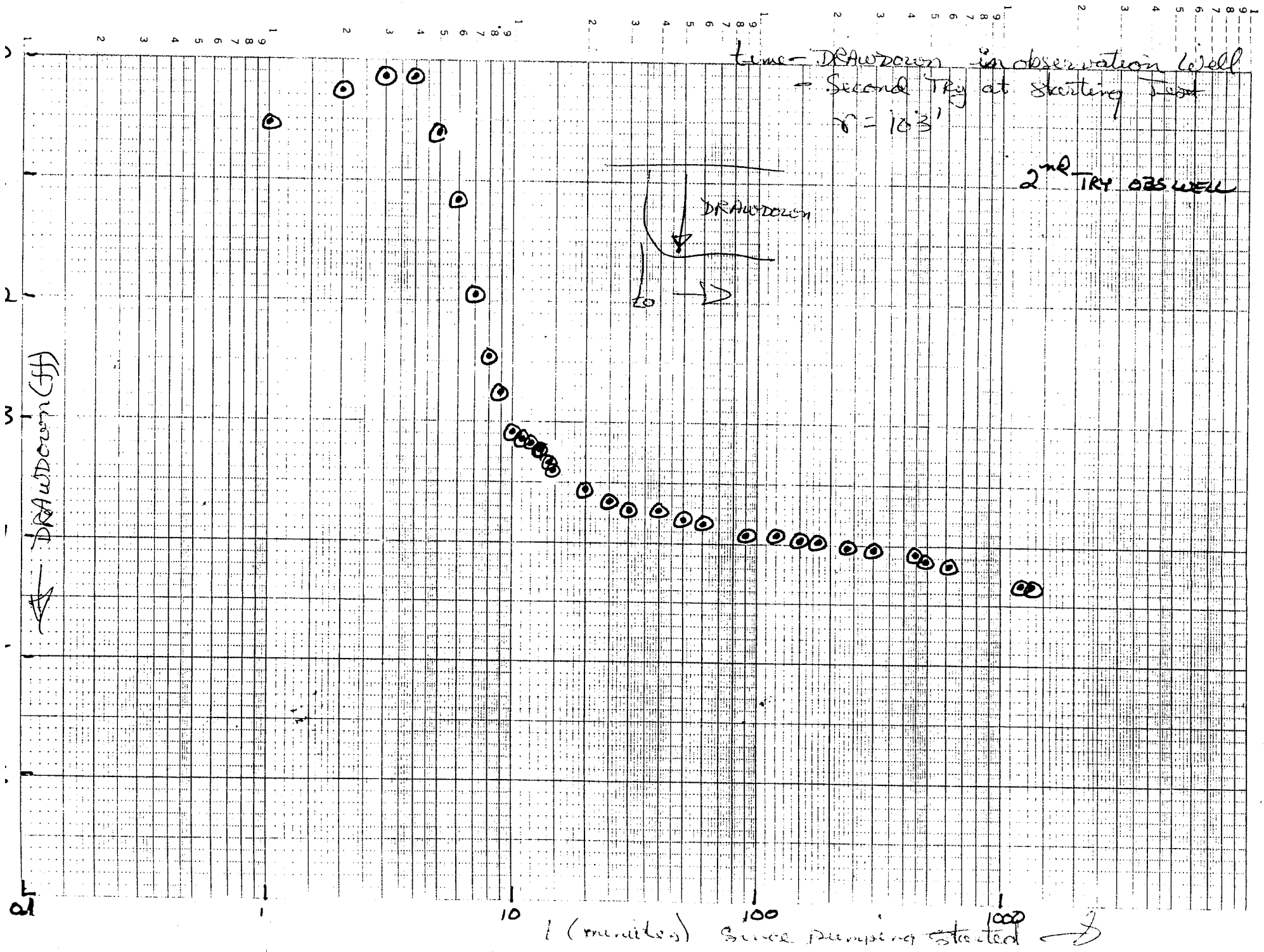
Pumped Well

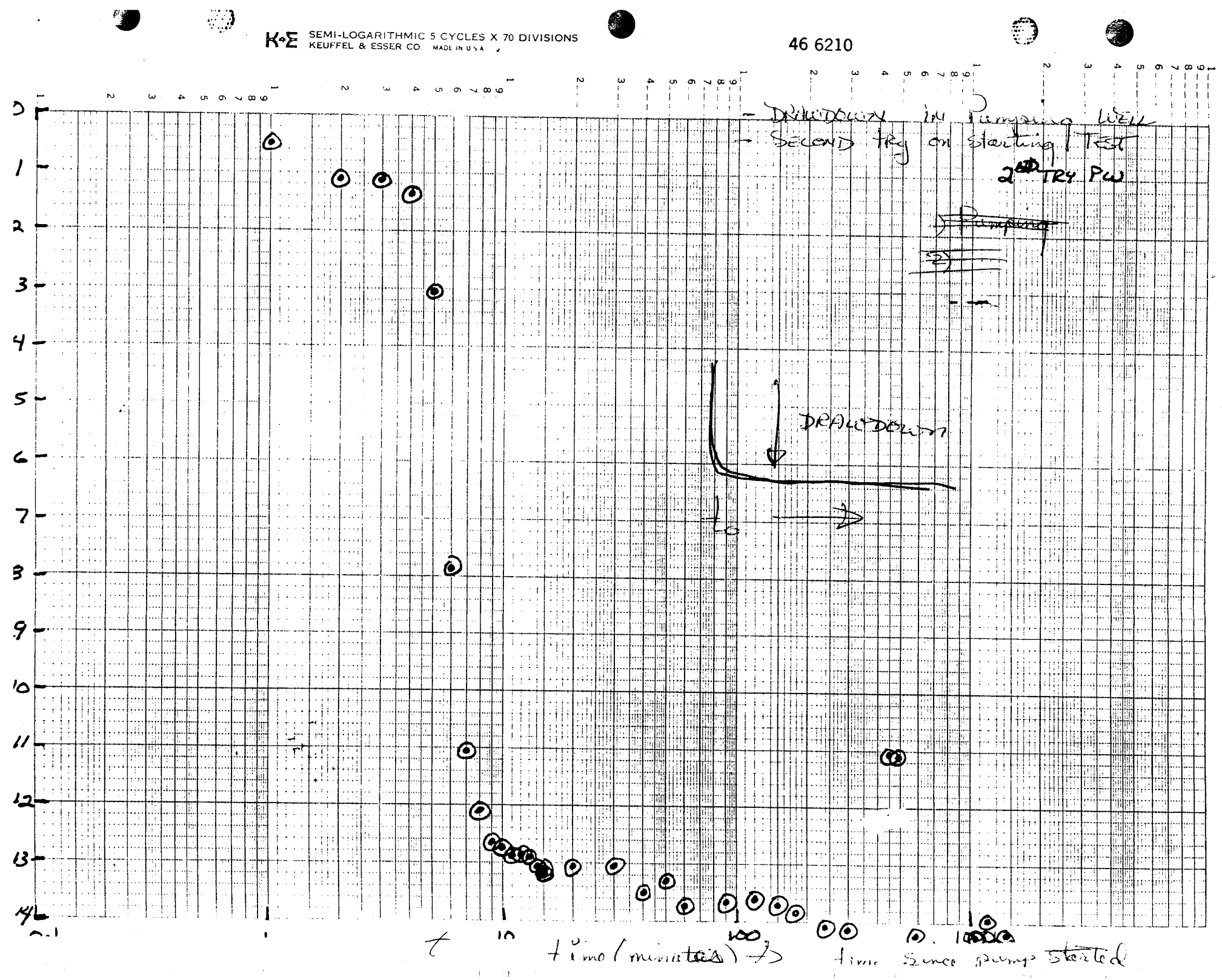

s
t
LOGARITHMIC
3 X 5 CYCLES
KEUFFEL & ESSER CO.
47 7523
MADE IN U.S.A.

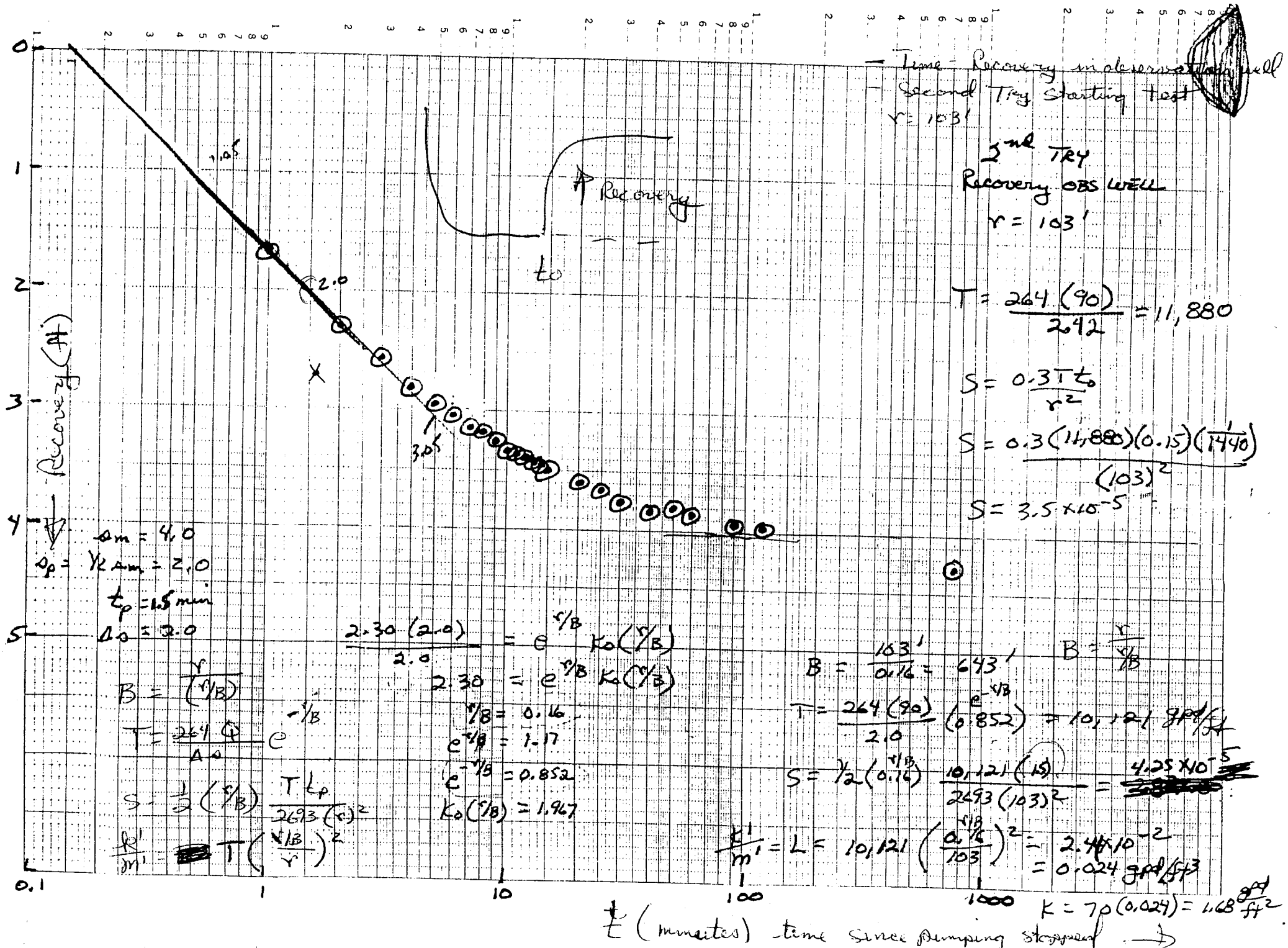

K&E LOGARITHMIC 3 X 5 CYCLES KEUFFEL & ESSER CO. 47 7523 MADE IN U.S.A.

K•E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.

46 6210




K&E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.
46 6210
DRAWDOWN in Pumping WELL
SECOND TRY on Starting Test
2nd TRY PW
Pumping
DRAWDOWN
t
time (minutes)
time Since pump started



$T = \frac{264\,(90)}{2.42} = 11{,}880$

$S = \frac{0.3\,T\,t_o}{r^2}$

$S = \frac{0.3\,(11{,}880)(0.15)\left(\frac{1}{1440}\right)}{(103)^2}$

$S = 3.5 \times 10^{-5}$

$s_m = 4.0$

$s_p = \frac{1}{2} s_m = 2.0$

$t_p = 1.5$ min

$s_o = 3.0$

$B = \frac{r}{(r/B)}$

$T = \frac{264\,Q}{s_o}\, e^{-r/B}$

$S = \frac{1}{2}\,(r/B)\,\frac{T\,t_p}{2693\,(r)^2}$

$\frac{k'}{m'} = \frac{T}{}\left(\frac{r/B}{r}\right)^2$

$\frac{2.30\,(2.0)}{2.0} = e^{r/B} K_o(r/B)$

$2.30 = e^{r/B} K_o(r/B)$

$r/B = 0.16$

$e^{r/B} = 1.17$

$e^{-r/B} = 0.852$

$K_o(r/B) = 1.947$

$B = \frac{103'}{0.16} = 643'$

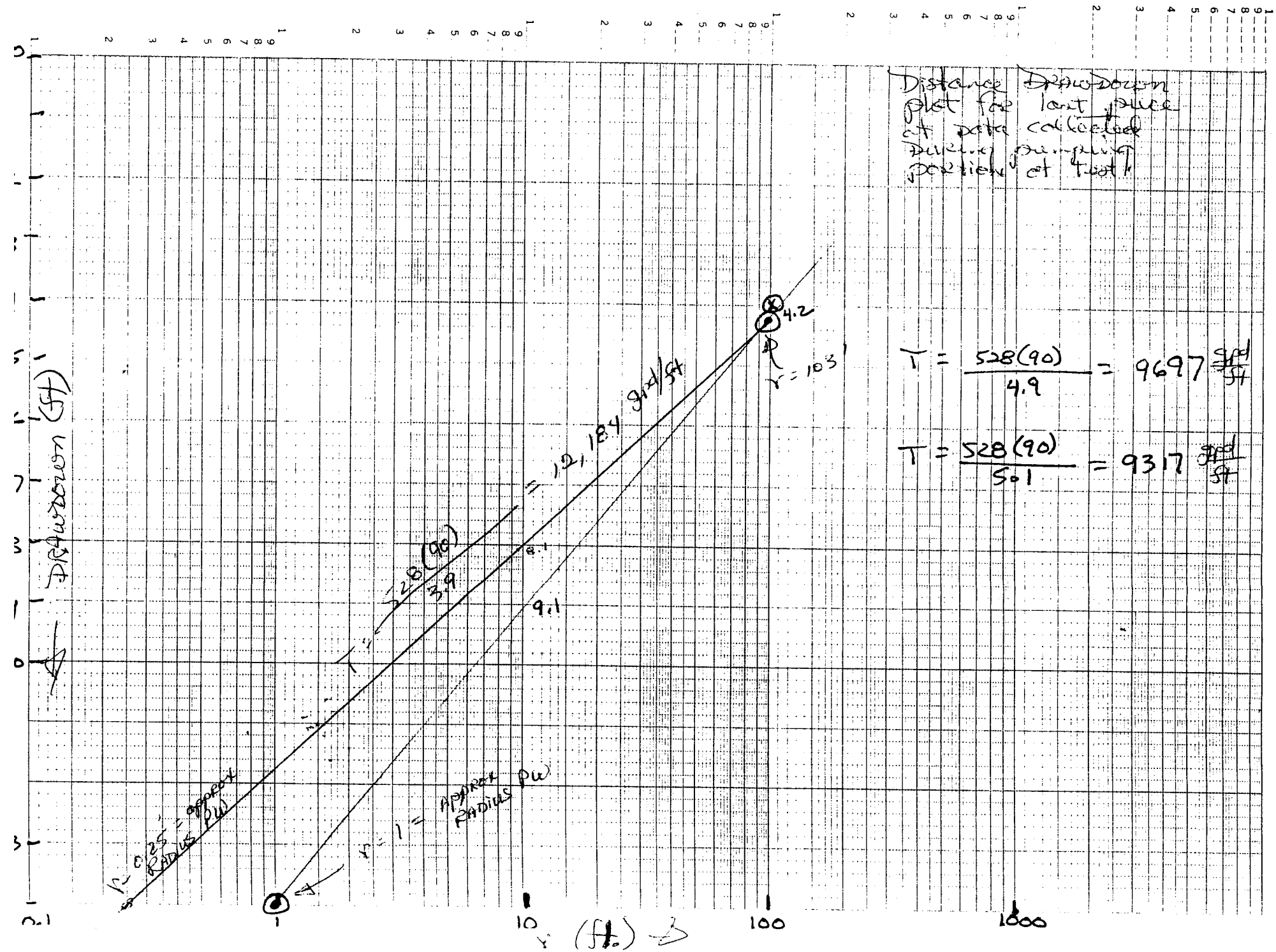
$T = \frac{264\,(90)}{2.0}\,(0.852) = 10{,}121$ gpd/ft

$S = \frac{1}{2}\,(0.16)\,\frac{10{,}121\,(15)}{2693\,(103)^2} = 4.25 \times 10^{-5}$

$\frac{k'}{m'} = L = 10{,}121\left(\frac{0.16}{103}\right)^2 = 2.4 \times 10^{-2} = 0.024$ gpd/ft^3

$K = 70\,(0.024) = 1.68$ gpd/ft^2

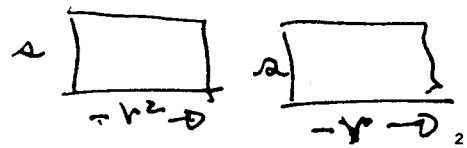
46 6210



Distance Drawdown plot for last pump test data collected during pumping portion of test

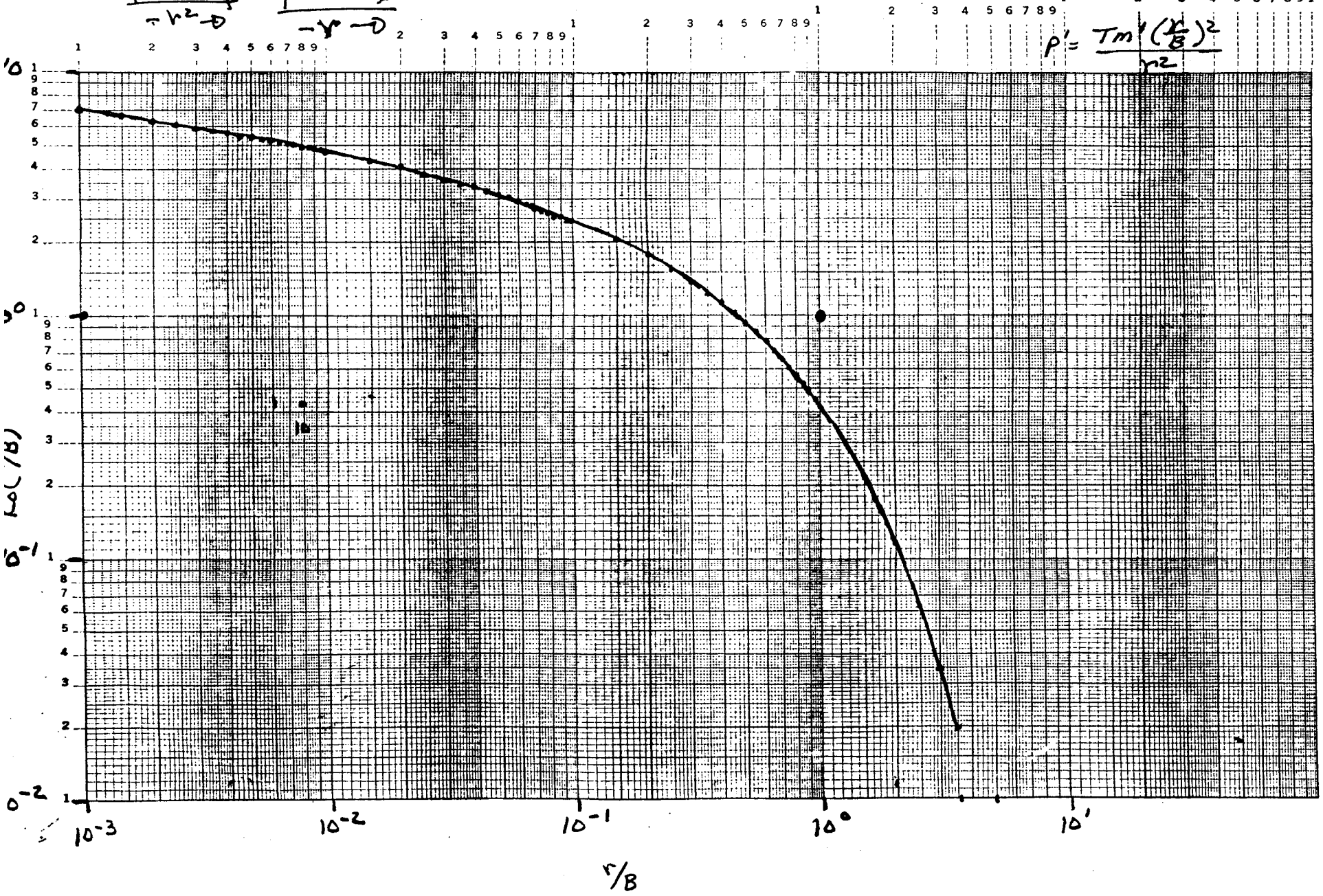
$$T = \frac{528(90)}{4.9} = 9697 \frac{gpd}{ft}$$

$$T = \frac{528(90)}{5.1} = 9317 \frac{gpd}{ft}$$



$$T = \frac{229\, K_0(r/B)\, Q}{s}$$

$$\rho' = \frac{Tm'}{r^2}\left(\frac{r}{B}\right)^2$$



P.W.

Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
			Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
11:13	25	1.4	14.23'				
11:28	5	SHUT VACUUM	PUMP				
7-15 2:12	MIN START	PUMP	D.Down from static WL				
2:13	1	.15'	.50				
2:14	2	.3	1.1				
2:15	3	.38	1.1				
	4	.38	1.35				
	5	.39	3.03				
	6	.39	7.87				
	7	.39	11.06				
	8	.38	12.22				
	9	.38	12.62				
		.34	12.76				
		.38	12.89				
		.38	12.84				
			12.91				
			13.15				
			13.21				
	20		13.08				
	30		13.04				
	40		13.52				
	50		13.32				
	60		13.74				
	90		13.66	Change tape (Batt. change)			
	120		13.59	Save tape			
	150		13.69				
	180		13.81				
	240		14.04				
	300		14.14				
9:45	453		11.01				
10:20	498		11.09				
12:10	600		14.22				

P.W.

	Time	Elapsed Time (t)	Manometer Reading (in.)	DD Drawdown or Recovery (ft.) Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
7-16	7:00	1008						
	8:00	1068		14.26				
	10:13	1201		13.99				
	12:13	1321		14.46				
MK	2:40	1468		14.28				
	3:23	1511		14.45				
	3:24	Pump SHUT OFF (RECOVERY)						
11508	3:24	1		3.33				
754.5		2		2.45				
503.33		3		2.06				
377.75		4		1.93				
302.4	✓	5		1.72				
252.2		6		1.51				
216.29		7		1.49				
189.4		8		1.41				
168.44		9		1.29				
151.7		10		1.23				
13.8		11		1.23				
126.6		12		1.23				
116.92		13		1.17				
108.64		14		1.04				
101.5		15		1.05				
76.35		20		1.03				
61.32		25		1.03				
61.23		30		.85				
38.68		40		.49?				
31.14		50		.69				
26.12		60		.69				
17.74		90		.62				
27 13.56		120		.60				
4.46		435		.45				
2.44		1050		.26				

(1413) Beginning Time

Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
			Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
	1	0	1.50				
	2		1.10				
	3		1.10				
	4		1 35				
	5		3.03				
	6		7.81				
	7		11.05				
	8		12.22				
	9		12.62				
	10		12.76				
	11		12.89				
	12		12.84				
	13		12.905				
	14		13.149				
	15		13.21				
	20		13.08				
	30		13.04				
	40		13.52				
	50		13.32				
	60		13.74				
			13.66	← Change tape			
			13.59	Same tape new batt			
	150		13.69				
	180		13.81				
	200		14.04	+.15 Not in Log			.84
	300		14.14				
→	9:45	20-0.83	?	DRW			
→	10:30	20-0.75	?	DRW			
≈ 12:15	10ml 10m.		20+2.38				
	0705	0.94	→	from tape			
	0800	25-2.58	?	DRW			
	1013	25-2.85	?	"			
	1213	25-2.38	?	"			
	1413						

2:40pm 20+2.44 19 4

PUMPING TEST DATA

Location:_____ Date:_____

Pumped Well:

Depth_____ft. Casing To_____ft. Diameter_____in.

Casing_____to_____ft. Diameter_____in.

Disc. Pipe Diameter_____in. Orifice Diameter_____in.

Q _____gpm.

Observation Wells:

Depth: 1=_____ft. 2=_____ft. 3=_____ft. 4=_____ft.

Casing Diameter: 1=_____in. 2=_____in. 3=_____in. 4=_____in.

Casing To: 1=_____ft. 2=_____ft. 3=_____ft. 4=_____ft.

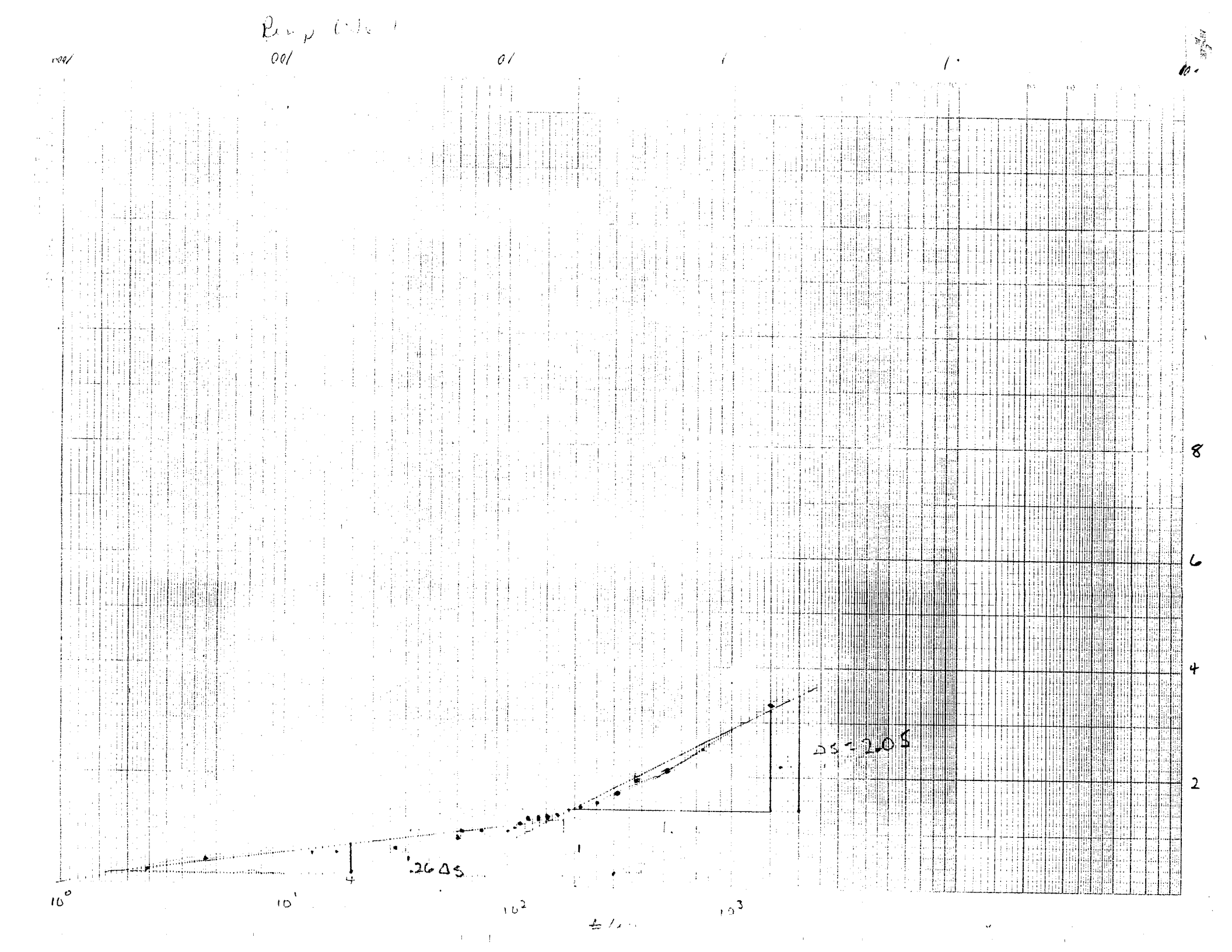
Dist.(r): 1=_____ft. 2=_____ft. 3=_____ft. 4=_____ft.

Screen: 1=_____to_____ft. 2=_____to_____ft. 3=_____to_____ft.

Screen Diameter: 1=_____in. 2=_____in. 3=_____in. 4=_____in.

Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
			Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
10:48		2"					
10:49		2"					
10:50		2"					
10:51		2					
10:52		2"					
10:53		3"					
10:54		2 ½"					
10:55		2 ½"					
10:56		2 ½"					
10:57		4"					
10:58		9					
11:03		1' 5"					

Time	Elapsed Time (t)	Manometer Reading (in.)	Drawdown or Recovery (ft.)				
			Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
11:08		1' 6"					
11:13		1' 5"					
11:18		1' 4"					
11:23		1' 4"					
11:28 (Stopped 11:24)							
7/15/81 2:13 +10 sec.							
[redacted]		.15"					
2:14		.3"					
2:15		.38					
2:16		.38					
2:17		.39					
2:18		.39					
2:19		.39					
2:20		.39					
2:21		.38					
2:22		.38					
2:23		.39					
2:28		.38				WATER SAMPLE	
2:33		.38					
2:38							
	60	.36					
	90? 180?	0.39					
	135					Water Sample	
	150	0.39					
→	9:45	0.39					
→ 7/16/81	0800	0.40					
	1013	0.39					
	1213	0.39					
	245	.40					
	1500	→				→ 2 Water Sample	


.26 Δs
Δs = 2.0 s
10^0
10^1
10^2
10^3
2
4
6
8
10

OBS Wells Drawdown