OPTIMIZATION BY LEVENBERG-MARQUARDT MINIMIZATION ALGORITHM

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
1	.192	908.0	.3482E-04	.1000E-04
3	.555E-01	841.2	.3350E-04	.1861E-03
5	.544E-01	853.5	.3332E-04	.1746E-03
6	.544E-01	855.1	.3310E-04	.1706E-03
8	.544E-01	858.0	.3274E-04	.1671E-03
10	.543E-01	859.8	.3253E-04	.1648E-03
11	.543E-01	860.3	.3247E-04	.1642E-03
13	.543E-01	860.8	.3242E-04	.1637E-03

TERMINATION DUE TO PARAMETER CONVERGENCE

FINAL RESULTS

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
15	.543E-01	860.8	.3241E-04	.1637E-03

FRACTIONAL COMPONENTS OF FUNCTION VALUE

WELL # 1

1.000

DO YOU WANT A SENSITIVITY ANALYSIS ? (Y/N)

SENSITIVITY ANALYSIS

TWO STANDARD DEVIATION CONFIDENCE INTERVALS

PARAMETER	VALUE	LOWER LIMIT	UPPER LIMIT
TRANSMISS	860.8	859.1	862.6
STORTIVTY	.3241E-04	0.0000	0.8910E-04
SPEC_LEAK	.1636E-03	0.0000	0.8127E-03

TO CONTINUE ENTER "RETURN"

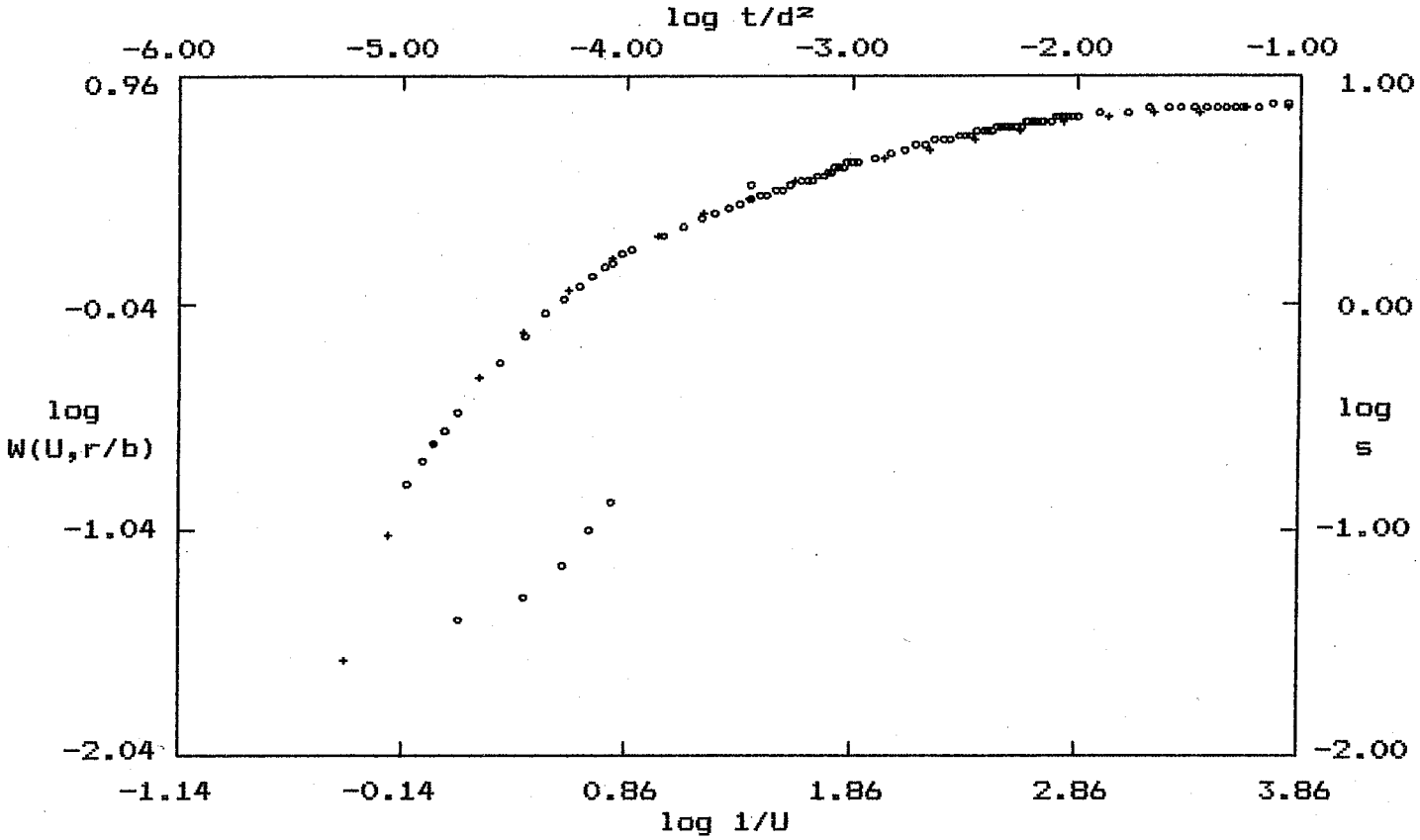
RTA 5

$T = 6,439$ gpd/ft

$S = 3.241 \times 10^{-5}$

$K'/b' = 1.637 \times 10^{-4}$ day^{-1}

PUMP TEST DATA



o - Data

\+ - Type Curve
Confined Leaky: r/B = 0.04

SOLUTION

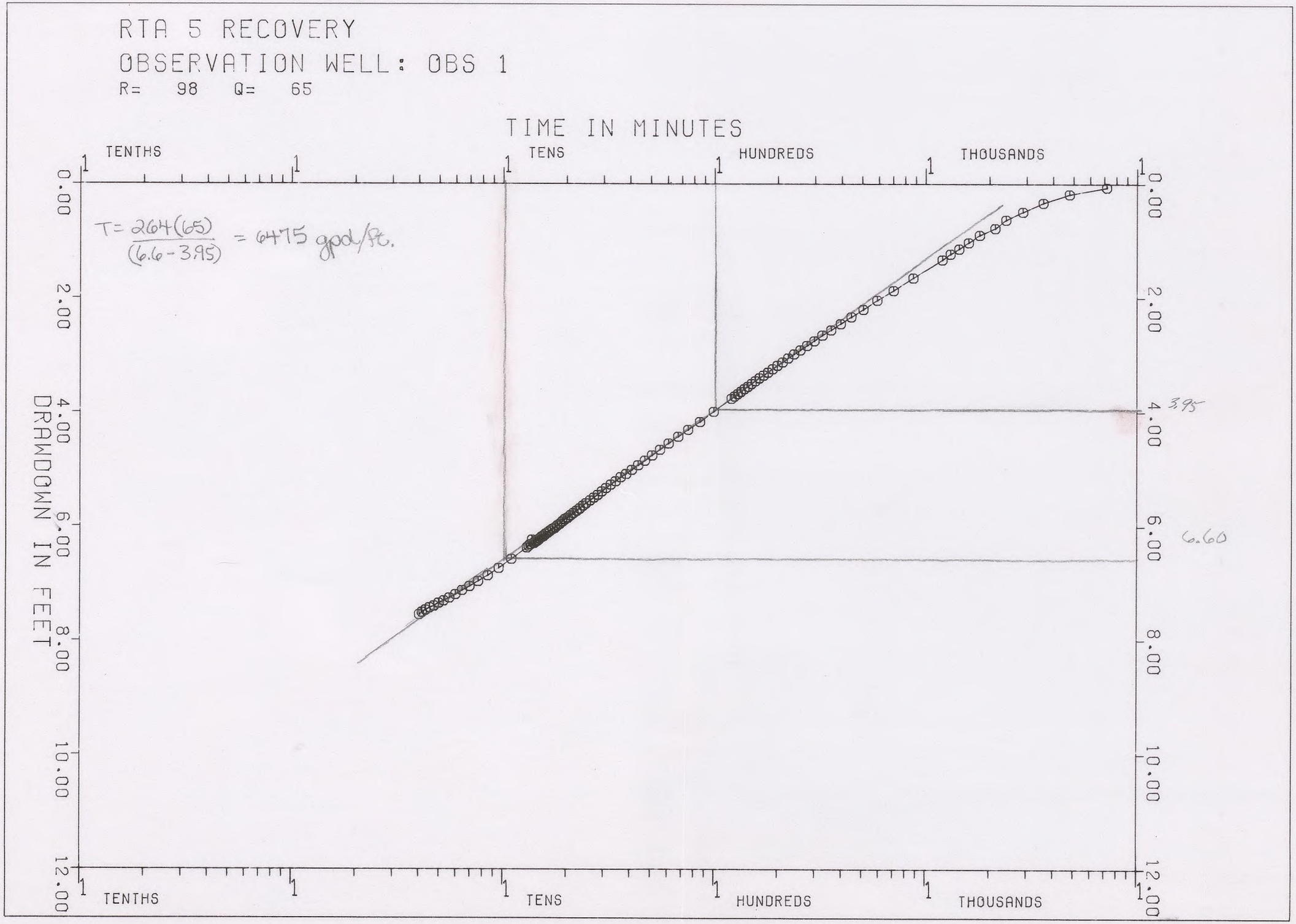
Transmissivity = 6.306E-01 ft.²/min. = 6,792 gpd/ft
Storativity = 3.482E-05

RTA 5

RTA 5 RECOVERY

OBSERVATION WELL: OBS 1

R= 98 Q= 65



$T = \frac{264(65)}{(6.6-3.95)} = 6475$ gpd/ft.

Match Point

$L_{u,v} = 1$

$1/u = 1$

$S = 1.1$

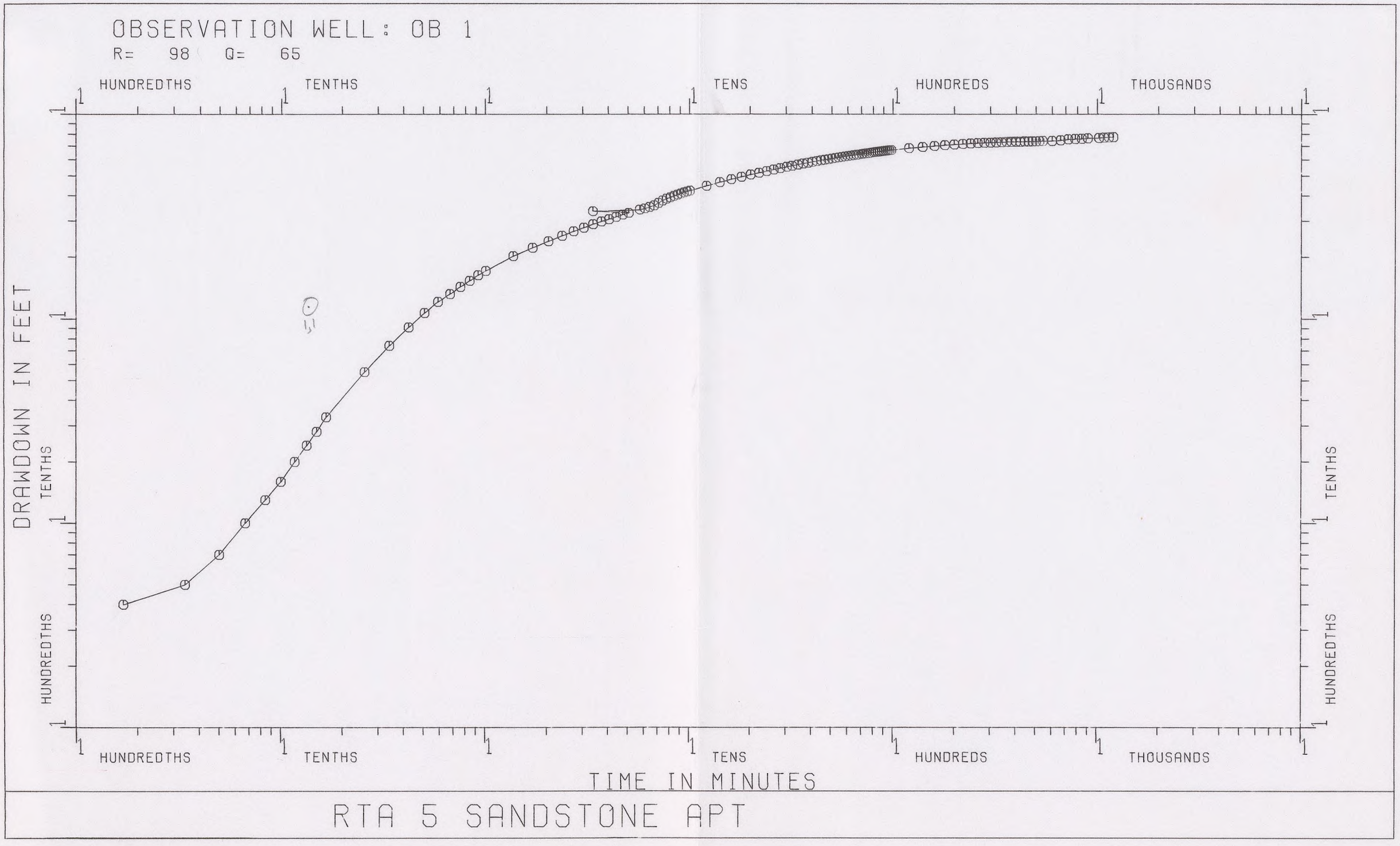
$t = \frac{.13}{1440}$ days

$v = .015$

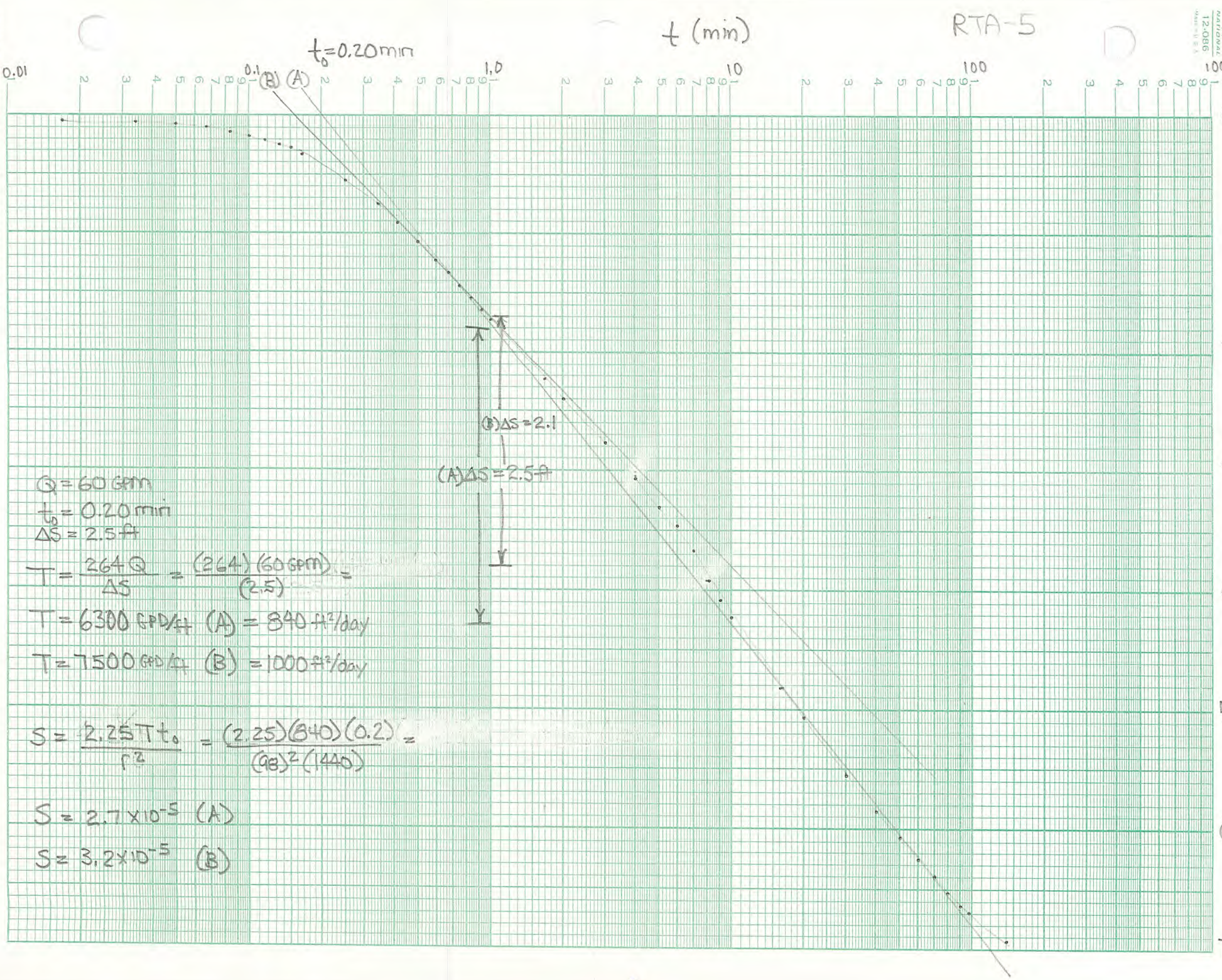
$$T = \frac{1440 Q L_{u,v}}{4\pi S(7.48)} = \frac{1440(65)(1)}{4\pi(1.1)(7.48)} = 905 \text{ ft}^2/\text{day} = 6771 \text{ gpd/ft}$$

$$S = \frac{4T t/r^2}{1/u} = \frac{4(905)\frac{.13/1440}{652}}{1} = 9.77 \times 10^{-5}$$

$$K'/b' = 4T \frac{v^2/r^2}{} = 4(905)\frac{.015^2}{98^2} = 8.48 \times 10^{-5}$$



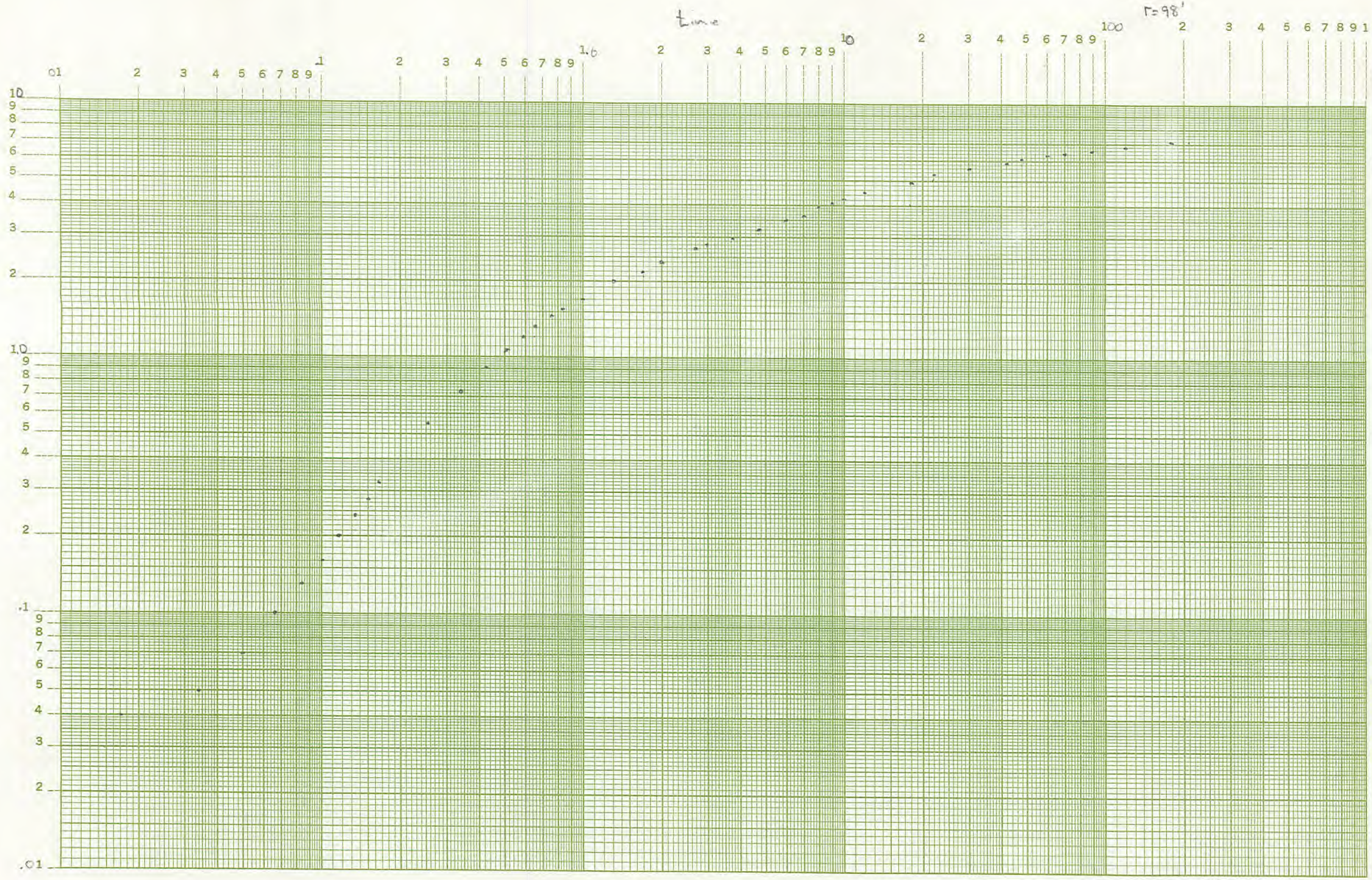
RTA 5 SANDSTONE APT


RTA-5
t (min)
t_0=0.20min
0.01
0.1
1.0
10
100
1000
(B) (A)
(B)ΔS=2.1
(A)ΔS=2.5ft
Q=60 GPM
t_0=0.20 min
ΔS=2.5ft
$T = \frac{264Q}{\Delta S} = \frac{(264)(60\ GPM)}{(2.5)} =$
T=6300 GPD/ft (A) = 840 ft²/day
T=7500 GPD/ft (B) = 1000 ft²/day
$S = \frac{2.25Tt_0}{r^2} = \frac{(2.25)(840)(0.2)}{(98)^2(1440)} =$
S=2.7x10⁻⁵ (A)
S=3.2x10⁻⁵ (B)
SEMI-LOGARITHMIC, 5 CYCLES X 10 TO THE INCH
5TH LINES ACCENTED

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

46 7522

RTA-5
In Situ
r = 98'



$\frac{K'}{b'} = 4T \frac{v^2}{r^2} = 4(6{,}200\ gpd/ft) \frac{.015^2}{98\ ft^2}$

$\frac{K'}{b'} = 5.8 \times 10^{-4}\ gpd/ft^3$ $K' =$

$t = .15$ min $b' =$
$s = 1.2$ ft
$L(u,v) = 1$
$\frac{1}{u} = 1$
$v = .015$

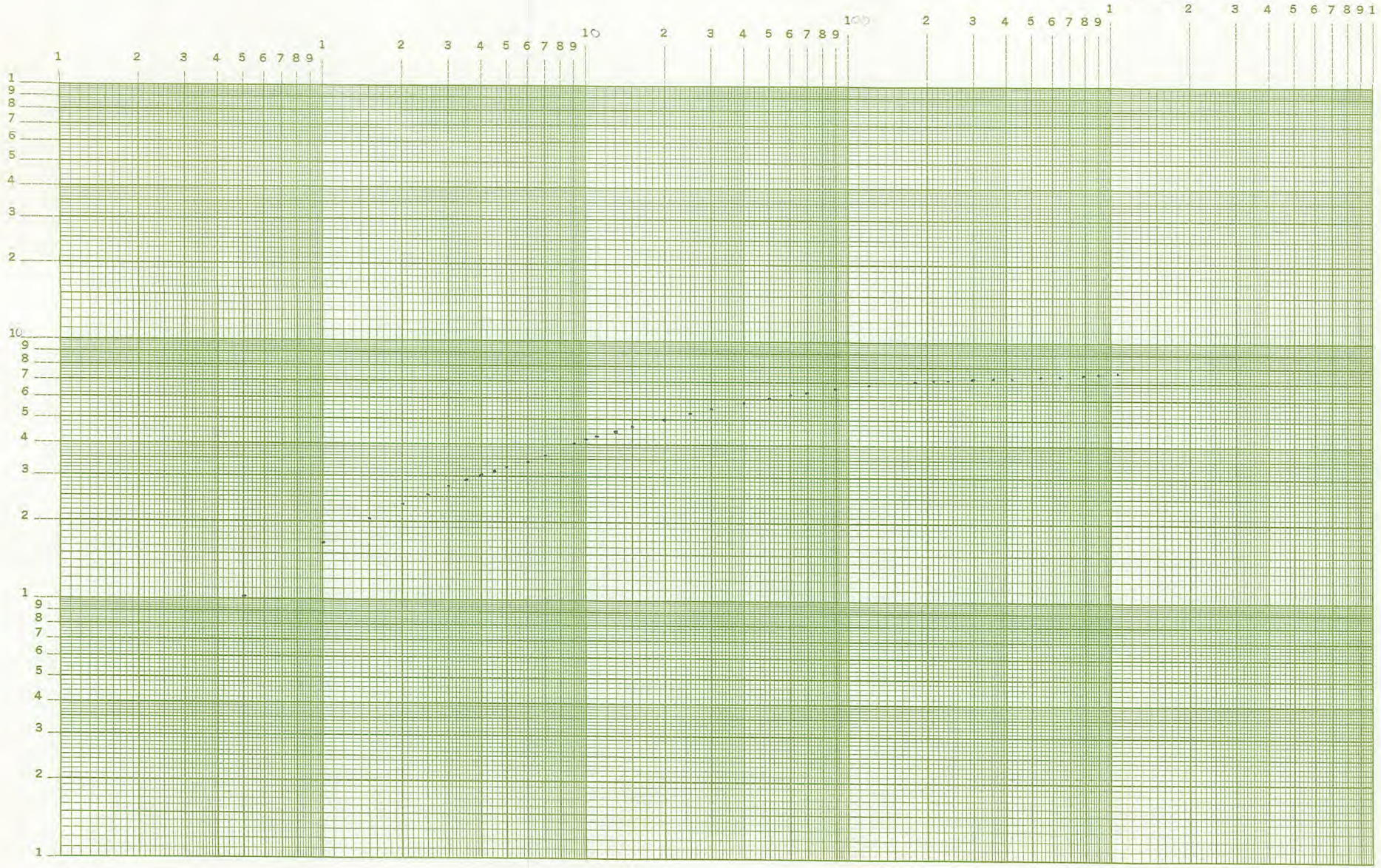
$T = \frac{Q}{4\pi s} L(u,v) = \frac{65\ gpm\ (1440\ mpd)}{4(\pi)\ 1.2\ ft} \times 1 = 6{,}200\ gpd/ft$

$S = 4T \frac{t/r^2}{1/u} = 4(829\ ft^2/day) \frac{1.04 \times 10^{-4}\ days / 9.6 \times 10^3\ ft^2}{1}$

$= 3.6 \times 10^{-5}$

46 7522

RTA-5
Hand measurements
r=98'

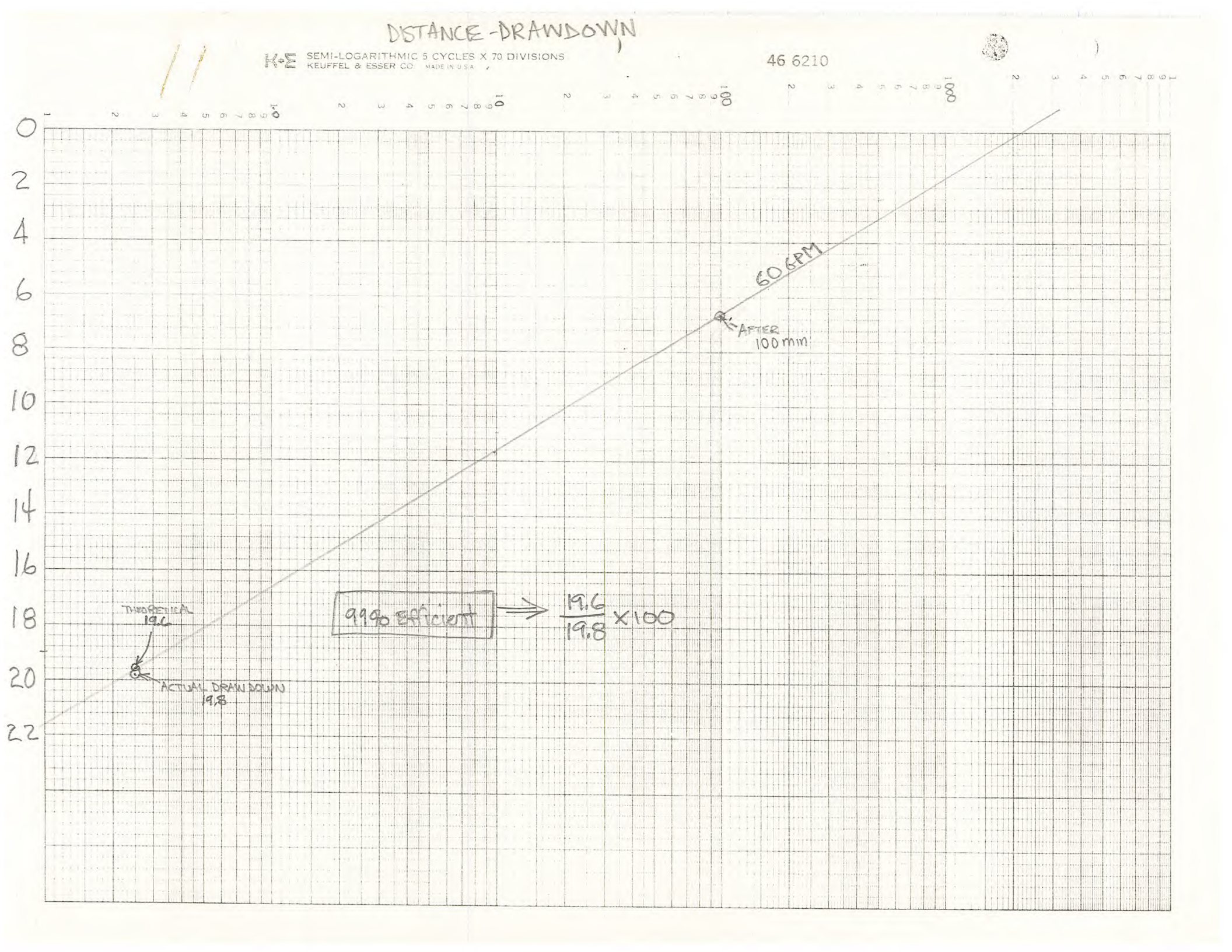


t = .15 min
Q = 1.2 ft
v = .015

DISTANCE-DRAWDOWN

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

46 6210



RTA-5
RECOVERY DATA

rta.-5b
Run 2
04/17/84

SE200A DATA
constant rate test

POWER FAILURE
REATTACH TO TAPE 1 NAMED
GRDWATER DOES DALLAS

TRANSDUCER TABLE

Input 1: pe.1
  Transducer s/n: 38
  Scale factor: 9.96
  Initial level: 24.17 feet

Input 2: obs.1
  Transducer s/n: 113
  Scale factor: 9.96
  Initial level: 17.28 feet

PUMP SCHEDULE

Drawdown for 600 min
Pump at 60 GPM

Recovery for 720 min

SAMPLING SCHEDULE

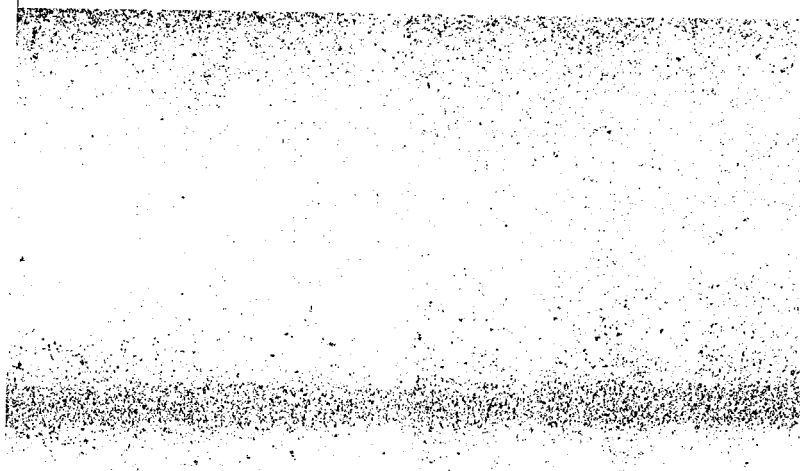
0-1	min	@	5	sec
1-10	min	@	20	sec
10-100	min	@	2	min
100-1000	min	@	20	min
1000-10000	min	@	60	min
10000-99999	min	@	200	min

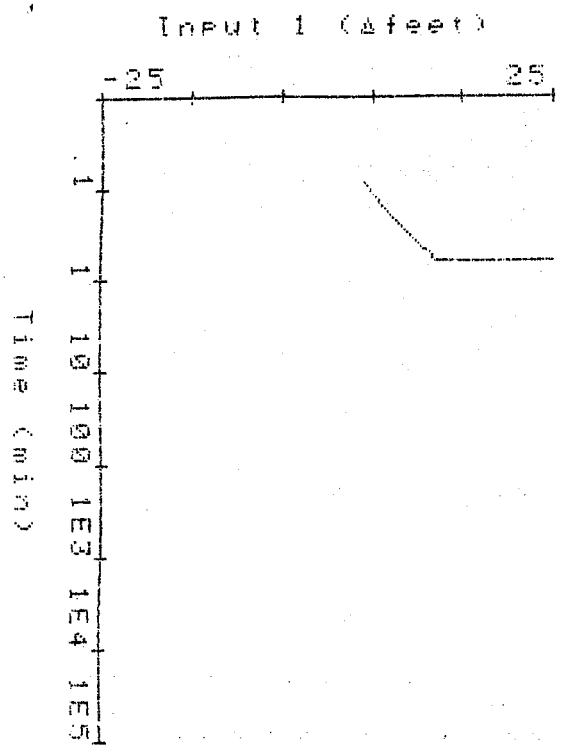
_____RECOVERY REPORT_____

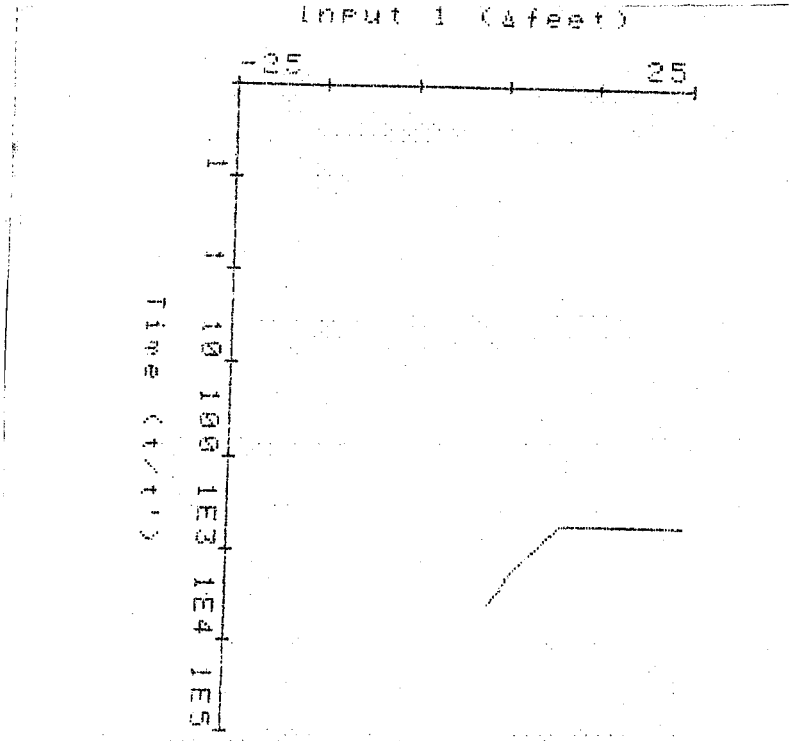
Started at 1545
Lasted 395.43 min

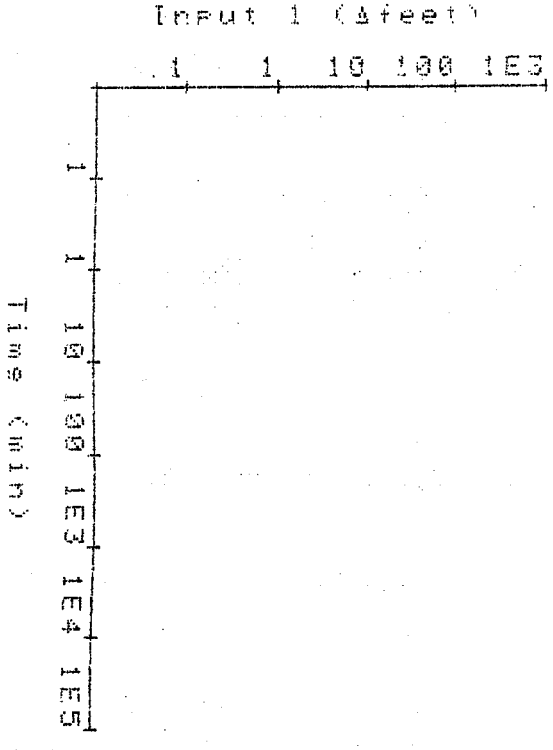
Input 1 (feet):

Time	ET (min)	level	Δlevel
1545	0.084	20.12	4.05
1545	0.167	17.87	6.30
1545	0.251	16.07	8.10
1546	0.334	14.72	9.45
1546	0.417	13.71	10.46
1546	0.501	12.97	11.20
1546	0.584	12.43	11.74
1546	0.667	999.99	999.99
1546	0.751	999.99	999.99
1546	0.834	999.99	999.99
1546	0.917	999.99	999.99
1546	1.001	999.99	999.99
1547	1.373	999.99	999.99
1547	1.706	999.99	999.99
1547	2.040	999.99	999.99
1548	2.373	999.99	999.99
1548	2.706	999.99	999.99
1548	3.040	999.99	999.99
1549	3.373	999.99	999.99
1549	3.706	999.99	999.99
1549	4.040	999.99	999.99
1550	4.373	999.99	999.99
1550	4.706	999.99	999.99
1550	5.040	999.99	999.99
1551	5.373	999.99	999.99
1551	5.707	999.99	999.99
1551	6.040	999.99	999.99
1552	6.373	999.99	999.99
1552	6.706	999.99	999.99
1552	7.040	999.99	999.99
1553	7.373	999.99	999.99
1553	7.706	999.99	999.99
1553	8.040	999.99	999.99
1554	8.373	999.99	999.99
1554	8.706	999.99	999.99
1554	9.040	999.99	999.99
1555	9.373	999.99	999.99
1555	9.706	999.99	999.99
1555	10.040	999.99	999.99
1557	12.204	999.99	999.99
1559	14.204	999.99	999.99
1601	16.204	999.99	999.99
1603	18.097	999.99	999.99
1605	20.117	999.99	999.99
1607	22.117	999.99	999.99
1609	24.117	999.99	999.99
1611	26.117	999.99	999.99
1613	28.117	999.99	999.99
1615	30.117	999.99	999.99
1617	32.117	999.99	999.99
1619	34.117	999.99	999.99
1621	36.117	999.99	999.99
1623	38.117	999.99	999.99
1625	40.117	999.99	999.99
1627	42.117	999.99	999.99
1629	44.117	999.99	999.99
1633	48.117	999.99	999.99
1636	50.432	999.99	999.99
1637	52.105	999.99	999.99
1639	54.105	999.99	999.99
1641	56.105	999.99	999.99
1643	58.105	999.99	999.99
1645	60.105	999.99	999.99
1647	62.105	999.99	999.99
1649	64.105	999.99	999.99
1651	66.105	999.99	999.99
1653	68.105	999.99	999.99
1655	70.105	999.99	999.99
1657	72.105	999.99	999.99
1659	74.105	999.99	999.99
1701	76.105	999.99	999.99
1703	78.105	999.99	999.99
1706	80.357	999.99	999.99
1707	82.103	999.99	999.99
1709	84.103	999.99	999.99
1711	86.103	999.99	999.99
1713	88.103	999.99	999.99
1715	90.103	999.99	999.99
1717	92.103	999.99	999.99
1719	94.103	999.99	999.99
1721	96.103	999.99	999.99
1723	98.103	999.99	999.99
1725	100.100	999.99	999.99
1746	120.270	999.99	999.99
1805	140.180	999.99	999.99
1825	160.180	999.99	999.99
1845	180.180	999.99	999.99
1905	200.180	999.99	999.99
1925	220.180	999.99	999.99
1945	240.180	999.99	999.99
2005	260.180	999.99	999.99
2025	280.180	999.99	999.99
2045	300.180	999.99	999.99
2105	320.180	999.99	999.99
2125	340.180	999.99	999.99
2145	360.180	999.99	999.99
2205	380.180	999.99	999.99
2221	393.430	999.99	999.99



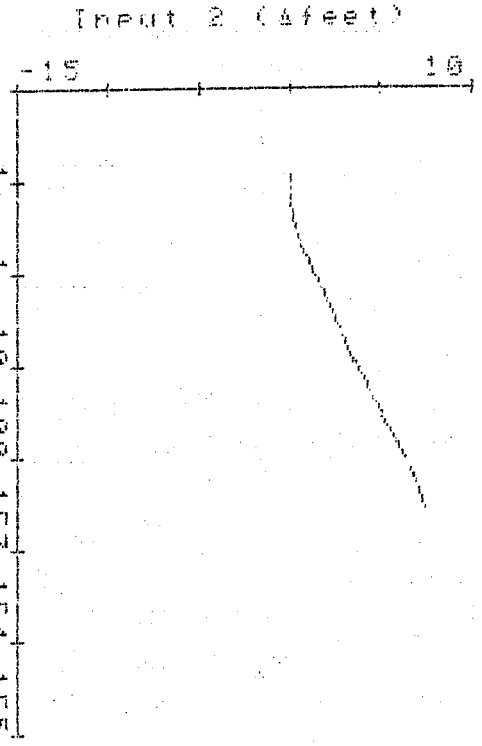

Input 1 (Δfeet)
-25
25
Time (min)
1
1
10
100
1E3
1E4
1E5

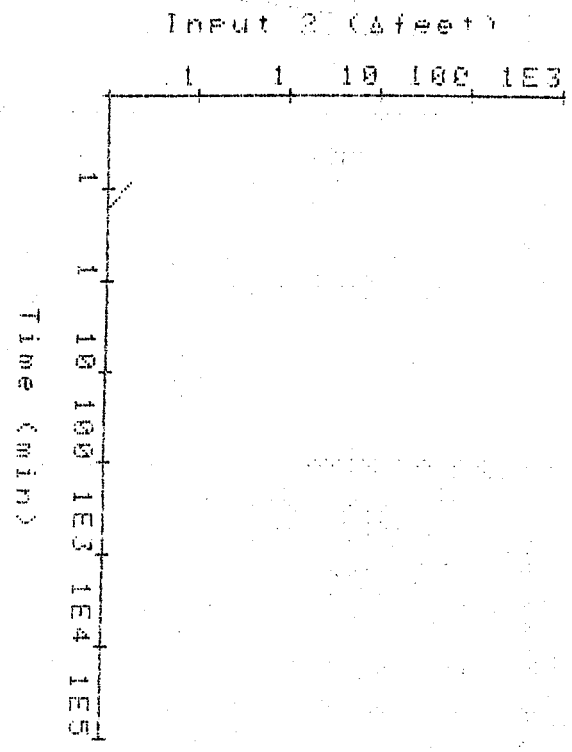

Input 1 (Δfeet)
-25
25
Time (t/t')
1
1
10
100
1E3
1E4
1E5

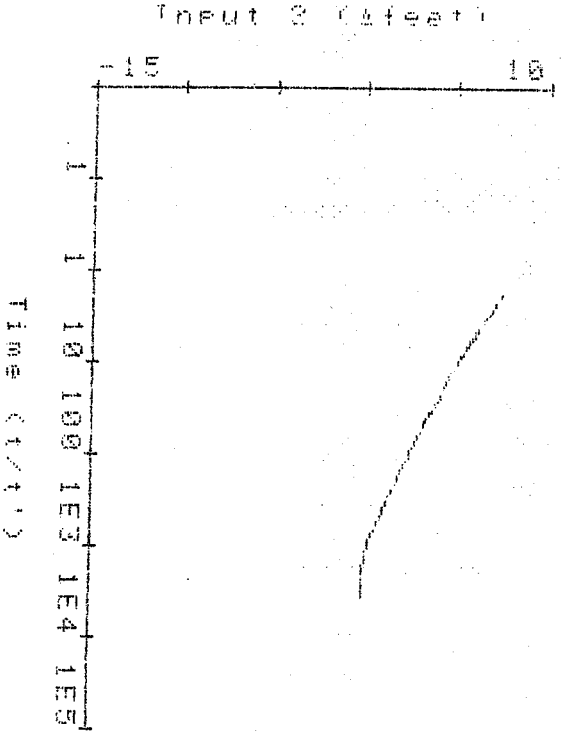

Input 1 (Δfeet)
1
1
10
100
1E3
Time (min)
1
1
10
100
1E3
1E4
1E5

Input 2 (feet)

Time	ET (min)	level	Δlevel
1545	0.084	17.30	-0.02
1545	0.167	17.22	0.06
1545	0.251	17.10	0.18
1546	0.334	16.95	0.33
1546	0.417	16.80	0.49
1546	0.501	16.65	0.63
1546	0.584	16.51	0.78
1546	0.667	16.38	0.90
1546	0.751	16.26	1.03
1546	0.834	16.14	1.14
1546	0.917	16.05	1.23
1546	1.001	15.95	1.33
1547	1.373	15.63	1.65
1547	1.706	15.41	1.87
1547	2.040	15.24	2.04
1548	2.373	15.08	2.20
1548	2.706	14.95	2.33
1548	3.040	14.83	2.45
1549	3.373	14.72	2.56
1549	3.706	14.63	2.65
1549	4.040	14.54	2.75
1550	4.373	14.45	2.83
1550	4.706	14.37	2.91
1550	5.040	14.30	2.98
1551	5.373	14.23	3.05
1551	5.707	14.16	3.12
1551	6.040	14.10	3.18
1552	6.373	14.04	3.24
1552	6.706	13.98	3.30
1552	7.040	13.93	3.35
1553	7.373	13.88	3.40
1553	7.706	13.83	3.45
1553	8.040	13.78	3.50
1554	8.373	13.73	3.55
1554	8.706	13.69	3.59
1554	9.040	13.64	3.64
1555	9.373	13.60	3.68
1555	9.706	13.56	3.72
1555	10.040	13.52	3.76
1557	12.204	13.29	3.99
1559	14.204	13.11	4.17
1601	16.204	12.97	4.31
1603	18.097	12.85	4.43
1605	20.117	12.73	4.55
1607	22.117	12.63	4.66
1609	24.117	12.52	4.76
1611	26.117	12.43	4.85
1613	28.117	12.35	4.93
1615	30.117	12.27	5.01
1617	32.117	12.20	5.08
1619	34.117	12.14	5.14
1621	36.117	12.07	5.21
1623	38.117	12.01	5.27
1625	40.117	11.95	5.33
1627	42.117	11.89	5.39
1629	44.117	11.83	5.45
1631	46.117	11.78	5.50
1633	48.117	11.73	5.55
1636	50.432	11.68	5.60
1637	52.105	11.64	5.64
1639	54.105	11.59	5.69
1641	56.105	11.55	5.73
1643	58.105	11.51	5.77
1645	60.105	11.47	5.81
1647	62.105	11.43	5.85
1649	64.105	11.40	5.88
1651	66.105	11.36	5.92
1653	68.105	11.32	5.96
1655	70.105	11.29	5.99
1657	72.105	11.26	6.03
1659	74.105	11.23	6.05
1701	76.105	11.20	6.08
1703	78.105	11.17	6.11
1706	80.357	11.14	6.14
1707	82.103	11.11	6.17
1709	84.103	11.09	6.19
1711	86.103	11.06	6.22
1713	88.103	11.03	6.25
1715	90.103	11.01	6.27
1717	92.103	10.98	6.30
1719	94.103	11.04	6.24
1721	96.103	10.96	6.32
1723	98.103	10.93	6.35
1725	100.100	10.90	6.38
1746	120.270	10.70	6.58
1805	140.180	10.54	6.74
1825	160.180	10.41	6.87
1845	180.180	10.31	6.97
1905	200.180	10.22	7.06
1925	220.180	10.15	7.13
1945	240.180	10.08	7.20
2005	260.180	10.02	7.26
2025	280.180	9.97	7.31
2045	300.180	9.93	7.35
2105	320.180	9.89	7.40
2125	340.180	9.85	7.43
2145	360.180	9.81	7.47
2205	380.180	9.77	7.51
2221	395.430	9.73	7.55







SE200A manufactured by
In-situ, inc.
Laramie Wyoming

RTA-5
DRAWDOWN
DATA

erdwater does dallas
Run 1
04/16/84

SE200A DATA
constant rate test

Power failure occurred

TRANSDUCER TABLE

Input 1: Pw.1
Transducer s/n: 39
Scale factor: 9.96
Initial level: 4.35 feet

Input 2: obs.1
Transducer s/n: 113
Scale factor: 9.96
Initial level: 9.69 feet

FAST DATA

PUMP SCHEDULE

Drawdown for 2160 min
Pump at 70 GPM

Recovery for 600 min

SAMPLING SCHEDULE

0-10	sec	@	1 sec
10-60	sec	@	5 sec
1-10	min	@	20 sec
10-100	min	@	2 min
100-1000	min	@	20 min
1000-10000	min	@	50 min
10000-99999	min	@	200 min

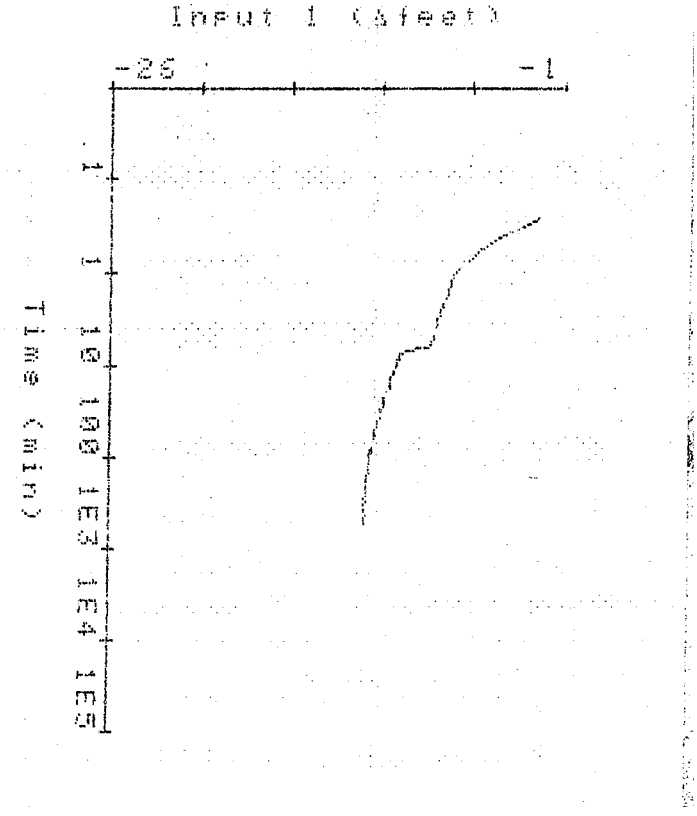
---------DRAWDOWN REPORT---------

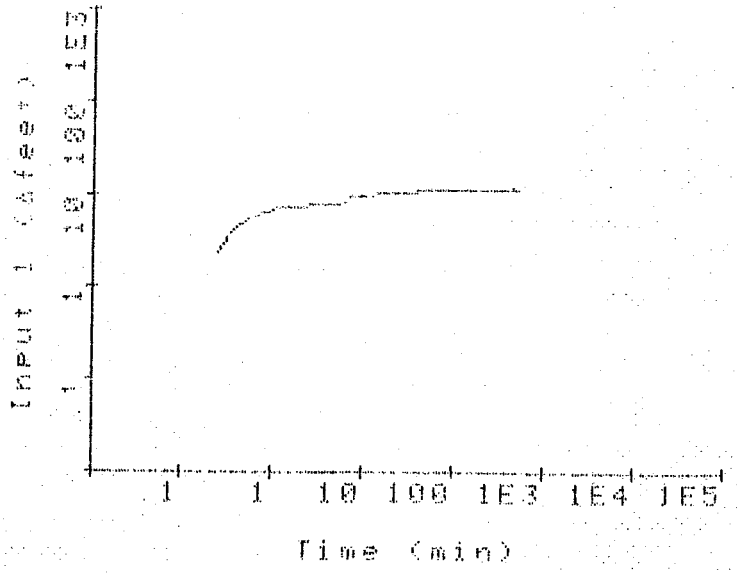
Started at 2039
Lasted 520.1 min

Input 1 (feet):

Time	ET (min)	level	Δlevel
2038	0.000	999.99	0.00
2038	0.257	6.75	-2.40
2038	0.340	7.98	-3.63
2038	0.424	8.87	-4.52
2038	0.507	9.57	-5.22
2038	0.590	10.03	-5.67
2038	0.674	10.40	-6.05
2038	0.757	10.66	-6.31
2038	0.840	10.90	-6.55
2038	0.924	11.07	-6.72
2039	1.007	11.25	-6.90
2039	1.375	11.61	-7.26
2039	1.709	11.78	-7.43
2040	2.042	11.94	-7.59
2040	2.375	12.10	-7.75
2040	2.709	12.20	-7.85
2041	3.042	12.26	-7.91
2041	3.375	12.36	-8.01
2041	3.709	12.39	-8.04
2042	4.042	12.42	-8.07
2042	4.375	12.48	-8.13
2042	4.709	12.52	-8.17
2043	5.042	12.57	-8.22
2043	5.375	12.61	-8.26
2043	5.709	12.62	-8.27
2044	6.042	12.71	-8.36
2044	6.375	12.79	-8.44
2044	6.709	13.24	-8.89
2045	7.042	14.05	-9.70
2045	7.375	14.26	-9.91
2045	7.709	14.34	-9.99
2046	8.042	14.38	-10.03
2046	8.375	14.43	-10.08
2046	8.709	14.50	-10.15
2047	9.042	14.50	-10.15
2047	9.375	14.57	-10.22
2047	9.709	14.56	-10.21
2048	10.042	14.57	-10.22
2050	12.138	14.69	-10.34
2052	14.138	14.84	-10.49
2054	16.138	14.96	-10.61
2056	18.138	14.94	-10.59
2058	20.138	15.05	-10.70
2100	22.118	15.14	-10.79
2102	24.138	15.17	-10.82
2104	26.105	15.23	-10.88
2106	28.107	15.25	-10.90
2108	30.228	15.32	-10.97
2110	32.103	15.40	-11.05
2112	34.197	15.46	-11.11
2114	36.197	15.43	-11.08
2116	38.197	15.47	-11.12
2118	40.197	15.51	-11.16
2120	42.197	15.55	-11.20
2122	44.315	15.57	-11.22
2124	46.057	15.56	-11.21
2126	48.057	15.60	-11.25
2128	50.057	15.63	-11.28
2130	52.057	15.69	-11.34
2132	54.057	15.65	-11.30
2134	56.057	15.67	-11.32
2136	58.057	15.71	-11.36
2138	60.057	15.74	-11.39
2140	62.057	15.74	-11.39
2142	64.057	15.72	-11.37
2144	66.198	15.77	-11.42
2146	68.057	15.74	-11.39
2148	70.407	15.79	-11.44
2150	72.073	15.81	-11.46
2152	74.073	15.80	-11.45
2154	76.205	15.82	-11.47
2156	78.205	15.86	-11.51
2158	80.207	15.85	-11.50
2200	82.207	15.92	-11.57
2202	84.205	15.90	-11.55
2204	86.207	15.91	-11.56
2206	88.205	15.89	-11.54
2208	90.205	15.94	-11.59
2210	92.205	15.96	-11.61
2212	94.207	15.96	-11.61
2214	96.207	15.98	-11.63
2216	98.205	15.95	-11.60
2238	120.140	15.98	-11.63
2258	140.140	16.00	-11.65
2318	160.160	16.05	-11.70
2338	180.150	16.08	-11.73
2358	200.100	16.12	-11.77
0018	220.030	16.17	-11.82
0038	240.030	16.16	-11.81
0058	260.030	16.20	-11.85
0118	280.030	16.22	-11.87
0138	300.030	16.17	-11.82
0158	320.030	16.23	-11.88
0218	340.130	16.22	-11.87
0238	360.070	16.28	-11.93
0258	380.100	16.30	-11.95
0318	400.100	16.29	-11.94
0338	420.100	16.20	-11.85
0358	440.100	16.35	-12.00
0418	460.100	16.26	-11.91
0438	480.100	16.29	-11.94
0458	500.100	16.26	-11.91
0518	520.100	16.29	-11.94

Average level = 16.02




Input 1 (Afeet)
1
10
100
1E3
1E4
1E5
Time (min)

rta.-5b
Run 2
04/17/84

SE200A DATA
constant rate test

POWER FAILURE
REATTACH TO TAPE 1 NAMED
GROWATER DOES DALLAS

TRANSDUCER TABLE

Input 1: pe.1
Transducer s/n: 38
Scale factor: 9.96
Initial level: 24.17 feet

Input 2: obs.1
Transducer s/n: 113
Scale factor: 9.96
Initial level: 17.20 feet

PUMP SCHEDULE

Drawdown for 600 min
Pump at 60 GPM

Recovery for 720 min

SAMPLING SCHEDULE

0-1	min	@	5 sec
1-10	min	@	20 sec
10-100	min	@	2 min
100-1000	min	@	20 min
1000-10000	min	@	60 min
10000-99999	min	@	200 min

SE200A manufactured by
In-situ, inc.
Laramie Wyoming

Fig.-5b
Run 2
04/17/84

SE200A DATA
constant rate test

--------DRAWDOWN REPORT---------

Started at 1046
Lasted 299.25 min

Input 1 (feet):

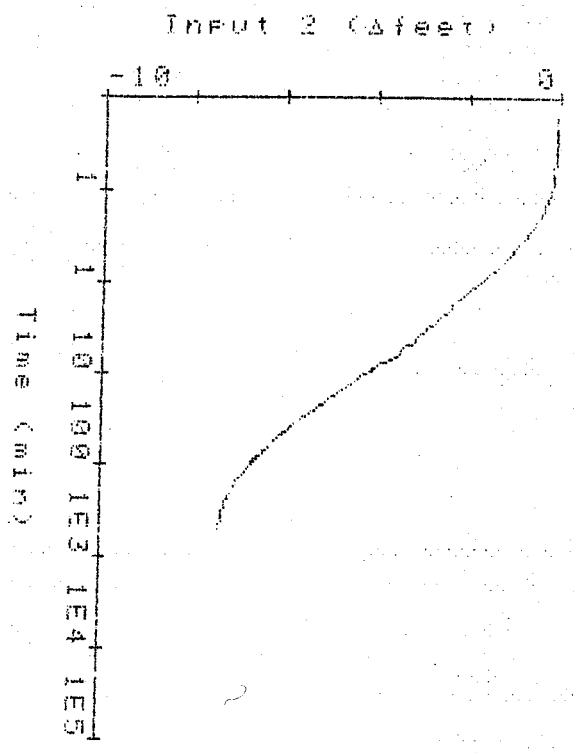
Time	ET (min)	level	Δlevel
1046	0.000	24.17	0.00
1046	0.084	24.15	0.02
1046	0.167	24.17	0.00
1046	0.251	24.18	-0.01
1046	0.334	24.17	0.00
1046	0.417	24.19	-0.02
1046	0.501	24.16	0.01
1047	0.584	24.16	0.01
1047	0.667	24.17	-0.00
1047	0.751	24.16	0.01
1047	0.834	24.17	0.00
1047	0.917	24.16	0.01
1047	1.001	24.20	-0.03
1047	1.368	24.19	-0.02
1048	1.702	24.21	-0.04
1048	2.035	24.17	-0.00
1048	2.368	24.18	-0.01
1049	2.702	24.18	-0.01
1049	3.035	24.21	-0.04
1049	3.368	24.22	-0.05
1050	3.702	24.20	-0.03
1050	4.035	24.16	0.01
1050	4.368	24.16	0.01
1051	4.702	24.18	-0.01
1051	5.035	24.20	-0.03
1051	5.368	24.18	-0.01
1052	5.702	24.17	0.00
1052	6.035	24.17	-0.00
1052	6.368	24.17	-0.00
1053	6.702	24.18	-0.01
1053	7.035	24.19	-0.02
1053	7.368	24.21	-0.04
1054	7.702	24.17	0.00
1054	8.035	24.19	-0.02
1054	8.368	24.18	-0.01
1055	8.702	24.19	-0.02
1055	9.035	24.22	-0.05
1055	9.368	24.22	-0.05
1056	9.702	24.21	-0.04
1056	10.035	24.20	-0.03
1058	12.062	24.21	-0.04
1100	14.062	24.17	-0.00
1102	16.062	24.18	-0.01
1104	18.062	24.22	-0.05
1106	20.062	24.17	0.00
1108	22.062	24.21	-0.04
1110	24.062	24.18	-0.01
1112	26.062	24.21	-0.04
1114	28.062	24.19	-0.02
1116	30.062	24.16	0.01
1118	32.062	24.20	-0.03
1120	34.062	24.22	-0.05
1122	36.062	24.22	-0.05
1124	38.062	24.22	-0.05
1126	40.062	24.22	-0.05
1128	42.062	24.16	0.01
1130	44.062	24.17	0.00
1132	46.062	24.24	-0.07
1134	48.062	24.21	-0.04
1136	50.062	24.23	-0.06
1138	52.062	24.18	-0.01
1140	54.062	24.20	-0.03
1142	56.062	24.17	0.00
1144	58.062	24.22	-0.05
1146	60.062	24.18	-0.01
1148	62.062	24.19	-0.02
1150	64.062	24.16	0.01
1152	66.062	24.18	-0.01
1154	68.062	24.22	-0.05
1156	70.062	24.20	-0.03
1158	72.270	24.18	-0.01
1201	74.682	24.20	-0.03
1202	76.117	24.20	-0.03
1204	78.117	24.14	0.03
1206	80.117	24.16	0.01
1208	82.117	24.14	0.03
1210	84.117	24.20	-0.03
1212	86.117	24.21	-0.04
1214	88.117	24.17	-0.00
1216	90.117	24.17	0.00
1218	92.117	24.24	-0.07
1220	94.102	24.26	-0.09
1222	96.102	24.21	-0.04
1224	98.102	24.21	-0.04
1226	100.100	24.24	-0.07
1246	120.240	24.21	-0.04
1306	140.240	24.30	-0.13
1326	160.240	24.26	-0.09
1346	180.230	24.26	-0.09
1406	200.230	24.21	-0.04
1426	220.220	24.22	-0.05
1446	240.180	24.24	-0.07
1506	260.180	24.20	-0.03
1526	280.180	24.20	-0.03
1545	293.250	23.55	0.62

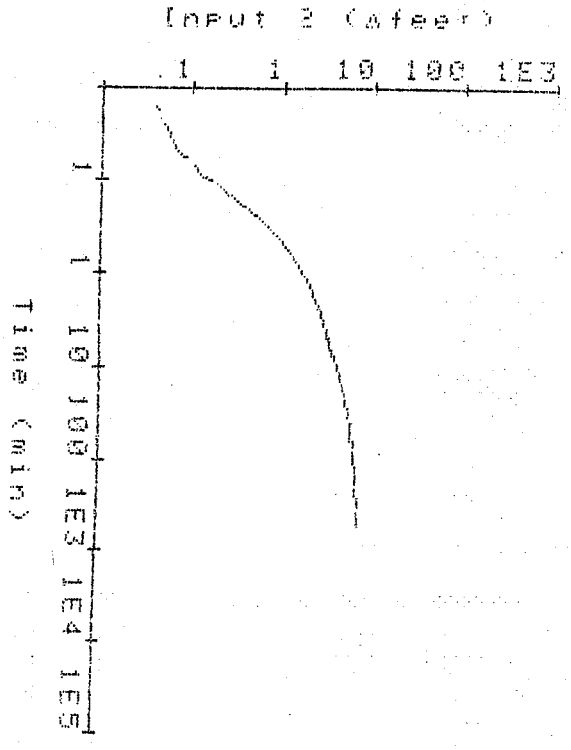
Average level = 24.18

Input 2 (feet):

Time	ET (min)	level	Δlevel
2038	0.000	9.69	0.00
2038	0.017	9.73	-0.04
2038	0.034	9.74	-0.05
2038	0.050	9.76	-0.07
2038	0.067	9.79	-0.10
2038	0.084	9.82	-0.13
2038	0.100	9.85	-0.16
2038	0.117	9.89	-0.20
2038	0.134	9.93	-0.24
2038	0.150	9.97	-0.28
2038	0.167	10.02	-0.33
2038	0.257	10.24	-0.55
2038	0.340	10.43	-0.74
2038	0.424	10.60	-0.91
2038	0.507	10.76	-1.07
2038	0.590	10.90	-1.21
2038	0.674	11.01	-1.32
2038	0.757	11.12	-1.43
2038	0.840	11.22	-1.53
2038	0.924	11.32	-1.63
2039	1.007	11.40	-1.71
2039	1.375	11.71	-2.02
2039	1.709	11.91	-2.22
2040	2.042	12.08	-2.39
2040	2.375	12.23	-2.54
2040	2.709	12.35	-2.67
2041	3.042	12.47	-2.78
2041	3.375	12.58	-2.89
2041	2.709	12.67	-2.98
2042	4.042	12.75	-3.06
2042	4.375	12.83	-3.14
2042	4.709	12.91	-3.22
2043	5.042	12.98	-3.29
2043	3.375	13.04	-3.35
2043	5.709	13.10	-3.41
2044	6.042	13.15	-3.46
2044	6.375	13.21	-3.52
2044	6.709	13.27	-3.58
2045	7.042	13.37	-3.68
2045	7.375	13.47	-3.78
2045	7.709	13.55	-3.86
2046	8.042	13.61	-3.92
2046	8.375	13.67	-3.98
2046	8.709	13.73	-4.04
2047	9.042	13.78	-4.09
2047	9.375	13.83	-4.14
2047	9.709	13.87	-4.18
2048	10.042	13.91	-4.22
2050	12.138	14.15	-4.46
2052	14.138	14.34	-4.65
2054	16.138	14.50	-4.81
2056	18.138	14.63	-4.94
2058	20.138	14.76	-5.07
2100	22.118	14.86	-5.17
2102	24.138	14.96	-5.27
2104	26.105	15.06	-5.36
2106	28.107	15.14	-5.45
2108	30.228	15.22	-5.53
2110	32.103	15.29	-5.60
2112	34.137	15.36	-5.67
2114	36.197	15.43	-5.74
2116	38.197	15.48	-5.79
2118	40.197	15.54	-5.85
2120	42.197	15.59	-5.90
2122	44.315	15.64	-5.95
2124	46.057	15.68	-5.99
2126	48.057	15.72	-6.03
2128	50.057	15.76	-6.07
2130	52.057	15.80	-6.11
2132	54.057	15.84	-6.15
2134	56.057	15.87	-6.18
2136	58.057	15.91	-6.22
2138	60.057	15.94	-6.25
2140	62.057	15.97	-6.28
2142	64.057	16.00	-6.31
2144	66.198	16.03	-6.34
2146	68.057	16.05	-6.36
2148	70.407	16.09	-6.40
2150	72.073	16.11	-6.42
2152	74.073	16.13	-6.44
2154	76.205	16.15	-6.46
2156	78.205	16.18	-6.49
2158	80.207	16.21	-6.52
2200	82.207	16.23	-6.54
2202	84.205	16.25	-6.56
2204	86.207	16.27	-6.58
2206	88.205	16.29	-6.60
2208	90.205	16.31	-6.62
2210	92.205	16.33	-6.64
2212	94.207	16.35	-6.66
2214	96.207	16.37	-6.68
2216	98.205	16.38	-6.69
2238	120.140	16.52	-6.83
2258	140.140	16.62	-6.93
2318	160.160	16.69	-7.00
2338	180.150	16.76	-7.07
2358	200.100	16.82	-7.12
0018	220.030	16.86	-7.17
0038	240.030	16.90	-7.21
0058	260.030	16.93	-7.24
0118	280.030	16.95	-7.26
0138	300.030	16.96	-7.27
0158	320.030	16.98	-7.29
0218	340.130	17.00	-7.31
0238	360.070	17.02	-7.33
0258	380.100	17.03	-7.34
0318	400.100	17.04	-7.35
0338	420.100	17.03	-7.34
0358	440.100	17.05	-7.36
0418	460.100	17.05	-7.36
0438	480.100	17.06	-7.37
0458	500.100	17.06	-7.37
0518	520.100	17.08	-7.39

Average level: 16.63


Input 2 (Δfeet)
-10
0
1
1
10
100
1E3
1E4
1E5
Time (min)


Input 2 (Δfeet)
.1
1
10
100
1E3
1
1
10
100
1E3
1E4
1E5
Time (min)

rta.-5b
Run 2
04/17/84

SE200A DATA
constant rate test

POWER FAILURE
REATTACH TO TAPE 1 NAMED
GRDWATER DOES DALLAS

TRANSDUCER TABLE

Input 1: pe.1
  Transducer s/n: 38
  Scale factor: 9.96
  Initial level: 24.17 feet

Input 2: obs.1
  Transducer s/n: 113
  Scale factor: 9.96
  Initial level: 17.28 feet

PUMP SCHEDULE

Drawdown for 600 min
Pump at 60 GPM

Recovery for 720 min

SAMPLING SCHEDULE

0-1	min	@	5 sec
1-10	min	@	20 sec
10-100	min	@	2 min
100-1000	min	@	20 min
1000-10000	min	@	60 min
10000-99999	min	@	200 min

Input 2 (feet)

Time	ET (min)	level	Δlevel
1046	0.000	17.28	0.00
1046	0.084	17.28	0.00
1046	0.167	17.28	-0.00
1046	0.251	17.28	-0.00
1046	0.334	17.28	-0.00
1046	0.417	17.29	-0.01
1046	0.501	17.28	-0.00
1047	0.584	17.29	-0.01
1047	0.667	17.28	-0.00
1047	0.751	17.29	-0.01
1047	0.834	17.28	-0.00
1047	0.917	17.29	-0.01
1047	1.001	17.28	-0.00
1047	1.368	17.28	-0.00
1048	1.702	17.28	0.00
1048	2.035	17.28	0.00
1048	2.368	17.28	0.00
1049	2.702	17.28	0.00
1049	3.035	17.28	0.00
1049	3.368	17.28	0.00
1050	3.702	17.28	0.00
1050	4.035	17.28	0.00
1050	4.368	17.28	0.00
1051	4.702	17.28	0.00
1051	5.035	17.28	0.00
1051	5.368	17.28	0.00
1052	5.702	17.28	0.00
1052	6.035	17.28	0.00
1052	6.368	17.28	0.00
1053	6.702	17.28	-0.00
1053	7.035	17.28	-0.00
1053	7.368	17.28	-0.00
1054	7.702	17.28	-0.00
1054	8.035	17.28	-0.00
1054	8.368	17.28	-0.00
1055	8.702	17.29	-0.01
1055	9.035	17.29	-0.01
1055	9.368	17.29	-0.01
1056	9.702	17.29	-0.01
1056	10.035	17.29	-0.01
1058	12.062	17.29	-0.01
1100	14.062	17.29	-0.01
1102	16.062	17.29	-0.01
1104	18.062	17.29	-0.01
1106	20.062	17.29	-0.01
1108	22.062	17.29	-0.01
1110	24.062	17.29	-0.01
1112	26.062	17.29	-0.01
1114	28.062	17.30	-0.02
1116	30.062	17.30	-0.02
1118	32.062	17.30	-0.02
1120	34.062	17.30	-0.02
1122	36.062	17.31	-0.03
1124	38.062	17.30	-0.02
1126	40.062	17.31	-0.03
1128	42.062	17.31	-0.03
1130	44.062	17.31	-0.03
1132	46.062	17.31	-0.03
1134	48.062	17.31	-0.03
1136	50.062	17.31	-0.03
1138	52.062	17.31	-0.03
1140	54.062	17.31	-0.03
1142	56.062	17.32	-0.04
1144	58.062	17.31	-0.03
1146	60.062	17.32	-0.04
1148	62.062	17.32	-0.04
1150	64.062	17.32	-0.04
1152	66.062	17.33	-0.05
1154	68.062	17.32	-0.04
1156	70.062	17.31	-0.03
1158	72.270	17.32	-0.04
1201	74.682	17.33	-0.05
1202	76.117	17.33	-0.05
1204	78.117	17.32	-0.04
1206	80.117	17.32	-0.04
1208	82.117	17.32	-0.04
1210	84.117	17.33	-0.05
1212	86.117	17.33	-0.05
1214	88.117	17.32	-0.04
1216	90.117	17.32	-0.04
1218	92.117	17.32	-0.04
1220	94.102	17.33	-0.05
1222	96.102	17.34	-0.05
1224	98.102	17.34	-0.06
1226	100.100	17.34	-0.06
1246	120.240	17.37	-0.09
1306	140.240	17.38	-0.10
1326	160.240	17.39	-0.11
1346	180.230	17.39	-0.11
1406	200.230	17.40	-0.12
1426	220.220	17.40	-0.12
1446	240.180	17.40	-0.12
1506	260.180	17.40	-0.12
1526	280.180	17.40	-0.12
1545	299.250	17.41	-0.13

Average level: 17.37

SE200A manufactured by
In-situ, inc.
Laramie Wyoming

PUMPING TEST DATA

Location: RTA-5 Hendry Co. Date: 4/16/84

Pumped Well:

Depth _____ ft. Casing To _____ ft. Diameter _____ in.

Casing _____ to _____ ft. Diameter _____ in.

Disc. Pipe Diameter 4 in. Orifice Diameter 2 in.

Q 65 gpm. Pumped well

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	ΔWL ~~Obs. 1~~	~~Tracer Test~~ ~~Obs. 2~~	~~Recovery~~ ~~Obs. 3~~	ΔWL Obs. 4
2038	0	21.0	4.35		10.64	24.26	
	15 sec		17.24		23.60	13.78	
	30 sec		17.92		24.49	11.85	
	45 sec		19.15		25.72	11.14	
2039	1 min		19.52		25.46	16.62	
	1.5 min		19.88		25.87	10.14	
2040	2 min		20.18		26.13	9.84	
	2.5 min		20.26		26.26	9.58	
2041	3		20.37		26.40	9.40	
	3.5		20.45		26.49	9.23	
2042	4		20.50		26.60	9.08	
	4.5		20.57		26.92	8.96	

Q RX 15 Hondo

Q=65

RTA-5

Time	Elapsed Time (t)	Manometer Reading (in.)	gpm	Drawdown or Recovery (ft.) Pumped	Obs. 1	Obs. 2 (Recovery)	Obs. 3	Obs. 4
4/16/64 2043	5.0 min	in.	Q	20.63		27.06	8.84	
2044	6.0	19.5	59	20.79		27.05	8.65	
2045	7.0			22.10		27.17	8.47	
2046	8.0			22.42		27.25	8.37	
2047	9.0			22.54		27.36	8.17	
2048	10.0	21.5	62	22.59		27.38	8.06	
2049	11			22.66		27.45	7.95	
2050	12			22.70		27.63	7.85	
2051	13			22.73		27.69	7.76	
2052	14			22.78		27.84	7.69	
2053	15	20.5	61	22.82		27.94	7.64	
2058	20			22.95		28.17	7.92	
2103	25			23.10		28.16	7.27	
2108	30	19.75	60	23.20		28.36	7.03	
2113	35			23.35		28.50	6.86	
2118	40			23.31		28.64	6.71	
2123	45	19.25	59	23.47		28.70	6.59	
2128	50			23.56		28.78	6.45	
2138	60	19.0	59	23.65		28.96	6.23	
2148	70			23.68		28.95	6.05	
2158	80			23.72		29.09	5.92	
2208	90	18.5	58	23.75		29.32	5.73	
2238	120	18.25	57	23.88		29.10	5.41	
2308	150	18.25	57	23.88		29.20	5.14	
2338	180	18.0	57	23.94		29.48	4.98	
4/17/64 0008	210	18.0	57	24.05		29.49	4.90	
0038	240	17.75	57	24.05		29.47	4.80	
0138	300	17.75	57	24.05		29.48	4.61	
0238	360	17.75	57	24.14		29.44	4.52	
0338	420			24.10		29.44		
0438	555			24.19		29.44		
0538	540			24.19				
0638	600			24.19				

RTA-5

Time	Elapsed Time (t)	Manometer Reading (in.)	gpm	Drawdown or Recovery (ft.) Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
4/17/84 0138	660	in.	Q	24.31				
0838	720			24.35				
0938	780	17½		24.20				
1038	840			24.19				
1138	900			24.20				
1238	960			24.27				
1338	1020	17.0		24.27				
1438	1080			24.28				
1538	1140			24.26				
1638	1200							
1738	1260							
1838	1320							
1938	1380							
24 HRS → 2038	1440							

PUMPING TEST DATA

Location: RTA-5 Hendry Co. Date: 4/16/84

Pumped Well:

Depth _____ ft. Casing To _____ ft. Diameter _____ in.

Casing _____ to _____ ft. Diameter _____ in.

Disc. Pipe Diameter _____ in. Orifice Diameter _____ in.

Q 65 gpm. Obs. well

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= 98 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.)				
				~~Tracer Test Pumped~~	Obs. 1	~~Obs. 2~~ ΔWL	Obs. 3 Recovery	~~Obs. 4~~ ΔWL
	0	in. H_2O	Q gpm	29.53	9.69		17.412	
	15 s						17.18	
	30 s				10.71	1.02	16.83	
	45 s			30.84			16.39	
	1.0m			31.40	11.34	1.65	16.02	
	1.5m			31.74	11.74	2.05	15.58	
	2.0m			32.00	12.03	2.34	15.23	
	2.5			32.21	12.25	2.56	15.03	
	3.0			32.40	12.42	2.77	14.83	
	3.5	21		32.55	12.57	2.88	14.65	
	4.0			32.70	12.72	3.03	14.53	
	4.5			32.84	12.82	3.13	14.41	

RTA-5 4/16/84

Time	Elapsed Time (t)	Manometer Reading (in.)	gpm	Drawdown or Recovery (ft.) Pumped	Obs. 1	Δ WL Obs. 2	Recovery Obs. 3	Obs. 4
	5.0m	in.	Q	32.96	12.95	3.26	14.27	
	6.0			33.90	13.11	3.42	14.08	
	7			33.33	12.37	3.68	13.90	
	8			33.46	13.57	3.88	13.75	
	9			33.63	13.73	4.04	13.61	
	10			33.75	13.86	4.19	13.50	
	11			33.84	14.00	4.31	13.38	
	12			33.94	14.10	4.41	13.26	
	13			34.10	14.20	4.51	13.17	
	14			34.11	14.29	4.60	13.09	
	15			34.20	14.38	4.69	13.01	
	20			34.55	14.73	5.04	12.72	
	25			34.80	14.99	5.30	12.47	
	30			34.95	15.19	5.50	12.24	
	35			35.10	15.37	5.68	12.05	
	40			35.30	15.51	5.82	11.90	
	45			35.40	15.64	5.95	11.75	
	50			35.40	15.74	6.05	11.62	
	60			35.60	15.91	6.22	11.40	
	70			35.75	16.07	6.38	11.25	
	80			35.82	16.18	6.49	11.10	
	90			35.90	16.28	6.59	10.96	
	120			36.00	16.49	6.80	10.64	
	150			36.50	16.63	6.94	10.40	
	180			36.50	16.72	7.03	10.23	
	210			36.10	16.80	7.11	10.12	
	240			35.95	16.85	7.16	10.03	
	360			35.80	16.91	7.22	9.88	
	360			35.59	16.96	7.27	9.75	
	420			35.80	16.99	7.30		
	480			35.35	17.00	7.31		
→	540				17.10	7.41		
	600				17.10	7.41		

Start hand tape here

RTA-5 4/16/84

Time	Elapsed Time (t)	Manometer Reading (in.)	gpm	Drawdown or Recovery (ft.) Pumped	Obs. 1	Obs. 2	Obs. 3	Obs. 4
	660	in.	Q		17.15	7.46		
	720				17.24	7.55		
	780				17.26	7.57		
	840				17.28	7.59		
	900				17.32	7.63		
	1020				17.35	7.66		
	1080				17.39	7.70		
	1140				17.40	7.71		
	1200				17.42	7.73		
	1260							
	1320							
	1380							
24 Hrs →	1440							
	1500							

SITE ~~HRT-5~~ RTA-5

WELL HRT-5M

01/10/04

Location: 13.5 mi S. of LaBelle off of SR29; 50 yds S. of Church Rd. on DOT easement

Arrive on site @ 1000 - met driller's - decided on site location.
Begin digging mud pit @ 1015
Begin filling pit @ 1105
Begin drilling @ 1150

Ft.	Cuttings Descriptions
0-10	Tan to br. LS w/ grey clay soft
10-20	Bl Gr Clay w/ br LS intermixed some fossil evidence
20-30	Bl clay (very plastic) w/ br LS
30-40	Bl grey clay w/ shell ⅓

LEVEL

clean L.S.
Note: Hit stringer of hard gr L.S. w/ pebble cgm

40-60 Gr sdy clay w/ lg grain (pebble) Qtz size sand - shelly - minor br L.S.

Note: Drilled very easily through relatively unconsolidated sandy clay - only 1 sample

60-70 Bl-gr sandy clay w/ qtz pebble blk & wht-transl - some lt. "

70-80 Dk gr clay - sandy w/ some br. clay & qtz pebbles

80-90 Same w/ some hd green L.S.

90-100 wh shell, qtz pebbles & LS

100-110 Same w/ some reef L.S.

110-120 Sandstone blk, wht-grey w/ some shell & white clay

120-130 Gr. dirty sand w/ some shell & qtz pebbles

130-140 V sft wh. - S.S. w/ some brown calcite - minor gr clay

140-150 Same but w/ more brown calcite - striated may be shell

150-160 predom. arg. white sand w/ hard br-gray L.S. - some br streaked calcite

160-170 White vf gr sdy clay - soft - w/ gray-wh shell rock w/ some br calcite

165' - hit hard rock for a few feet

170-180 Same but w/ more tan micrite (dolomite) evidence of gastropods bottom turning to gray L.S.

LEVEL

180-190 : Semi hd wh-tan L.S. - w/ some sand & white clay br. calcite & gastropods evidence of consol. shell rock - possible producing

190-200 Same but w/ more bl-gry clay "blue gumbo" - none - v tiffle sand.

200-210 same but lighter & more calcareous. evidence of same grey clay

210-220 clay mixed w/ br-tan-wh LS (v soft) - calcareous Last 5-10' drill rate increased - some qtz pebbles

220-230 Same w/ more LS & grey clay

230-240 Same w/ more gray clay - w/ some sand

240-250 aren. LS. w/ evidence of phos - minor - wh-gry clay Hard drilling

250-260 same w/ more sand - qtz pebbles - wh-transl. - Some shell -

260-270 wh-transl qtz sand - pebble size + large grain Faster drilling

280-290 med-lg gr SS w/ some LS org. cement - not well cemented evidence of some gr clay Last 5' kelly dropped - uncons. S.S.

290-300 gry gr clay w/ wh org. LS & some shell frag from above

300 same as above

Same, but a lot darker green more consolidated

LEVEL

300 - 310 Same; evidence of black phosphate.

310 - 320 Same; more phosphate though

320 - 330 Same

330 - 340 Same; white soft L.S. w/ black phosphorite — Drilled harder - hit L.S. @ ≈ 336, (MID HAWTHORN)

340 - 350 wh - tan hd LS w/ some clay from above; L.S. becomes more phos. as one drills deeper until almost all phos & no rock

350 - 360 Same grading into more phos. Becoming more dolomitic — tan — brown — increasingly more shell

360 - 370 Same, but becoming less phos

370 - 380 wh - tan - grey L.S. w/ less phos. Some shell, intermixed some soft white L.S. too. some possible fracturing

○ MID HAWTHORN

Finished drilling @ 1920 - continued to circulate.

1/11/83

Arrived on site @ 1030 & began reaming hole out.
Began circulating @ 1203
Began tripping out @ 1215 Finished 1230

Finished putting in casing (355') @ 1345
Begin mixing cement for grout @ 1355
Finished grouting in well @ 1500.
Go home!

1/12/83

Developed well w/ air - very little water produced - flowed < 1 GPM

LEVEL

HRT-5S

2" – 200'
165' casing

6' N. of 2" MH well
Finished 1/18/84

6" - 200
165' casing
Set casing 1/19/84
Finished 1/23/84

150' N. of above

Produces up to about 50 GPM

Note: Found 2" abandoned well N. 5' from abandoned house nr. 29¾ Church Rd.

3/20/84 RTA-5

Set up 0730 4" pipe w/ 2" orifice

2" mid Hawthorn - still trickles
less than 5 gpm

6" to SS-200 w/ 165' casing
TOC ±1' L.S.

Initial water level ——→ 1.9'

Time	mano	Flow	Ft below L.S.
0:00	7		1.9
1:00	6.75		10.8
2:00	6.5		10.9
3:00	6.5		11.1
4:00	6.5		11.1
5:00	6.5		11.1
7	6		11.2
9	6		11.2
11	6		11.2
15	6		11.5
16	18		18.6
17	16-22		18.8

LEVEL

Lost prime, manometer fluctuated & flow stopped.

- Head loss very large for small increases in pumping rate.

Temp - 77.2°F Cond - 674 $\frac{\text{umhos}}{\text{cm}}$

- 35' Open hole