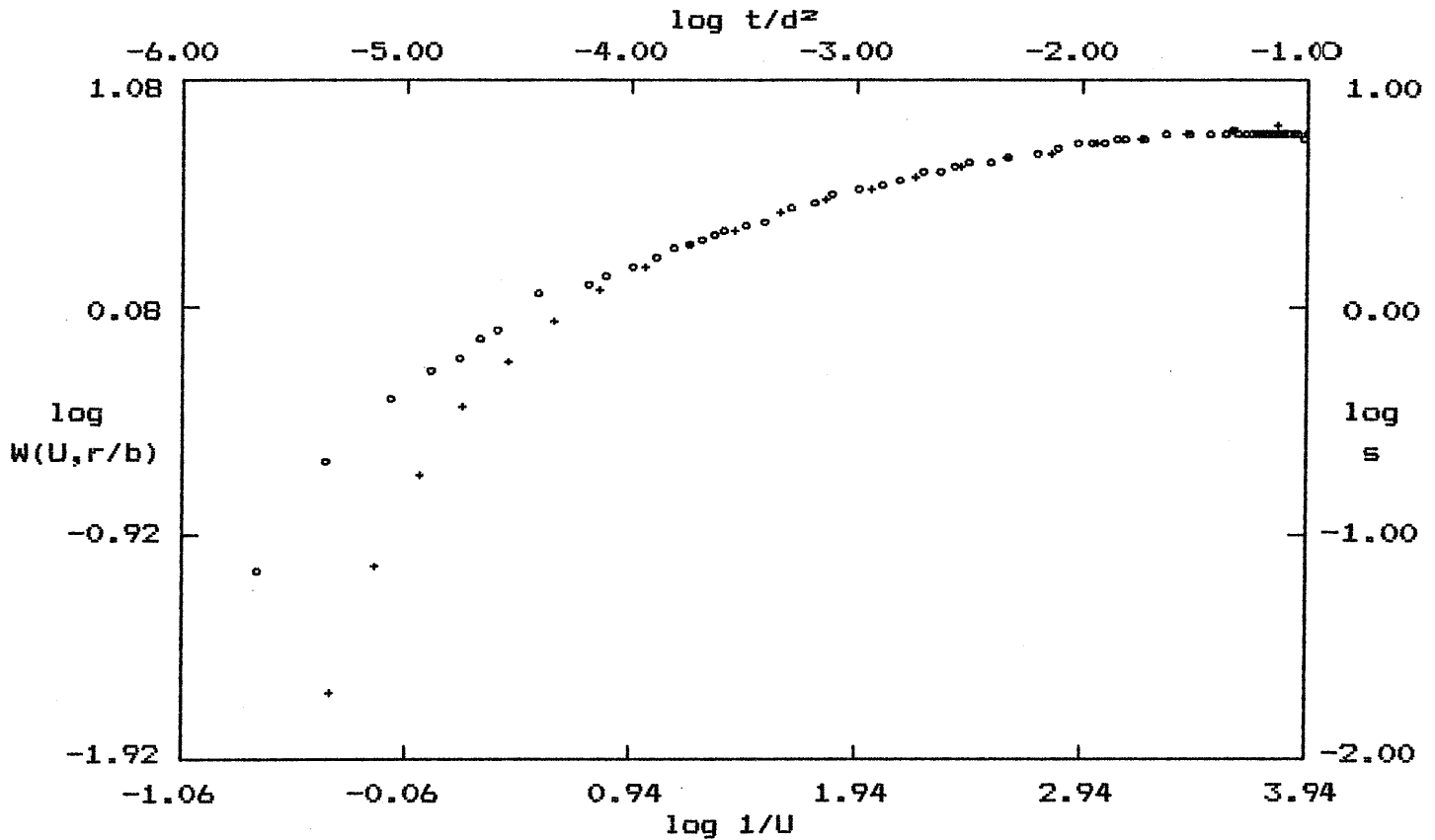


# PUMP TEST DATA



o - Data

+ - Type Curve

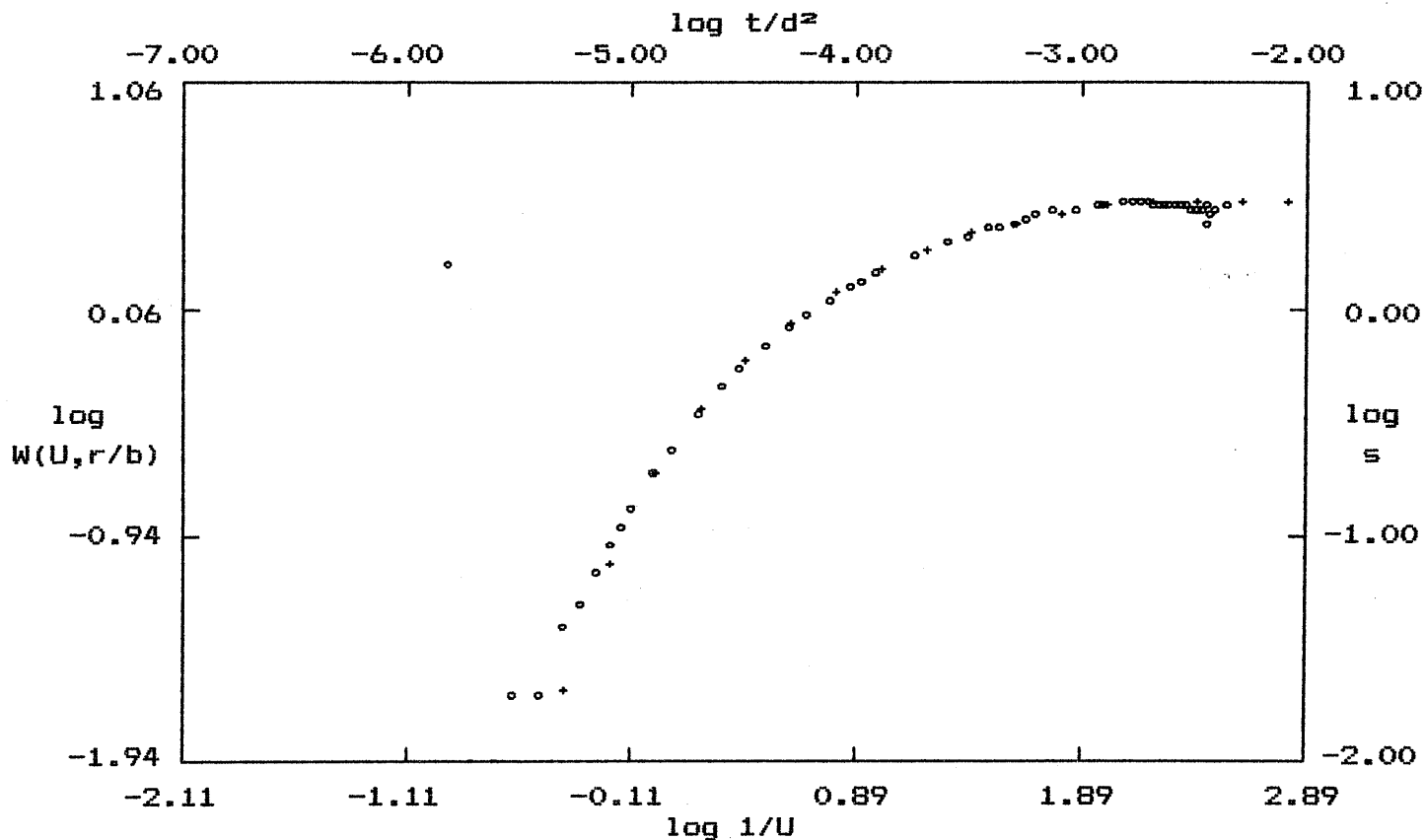
Confined Leaky:  $r/B = 0.02$

## SOLUTION

Transmissivity =  $9.643E+00$  ft.<sup>2</sup>/min. = 103,867 gpd/ft  
 Storativity =  $4.429E-04$

ASCE phase I obs 1

# PUMP TEST DATA



o - Data

+ - Type Curve

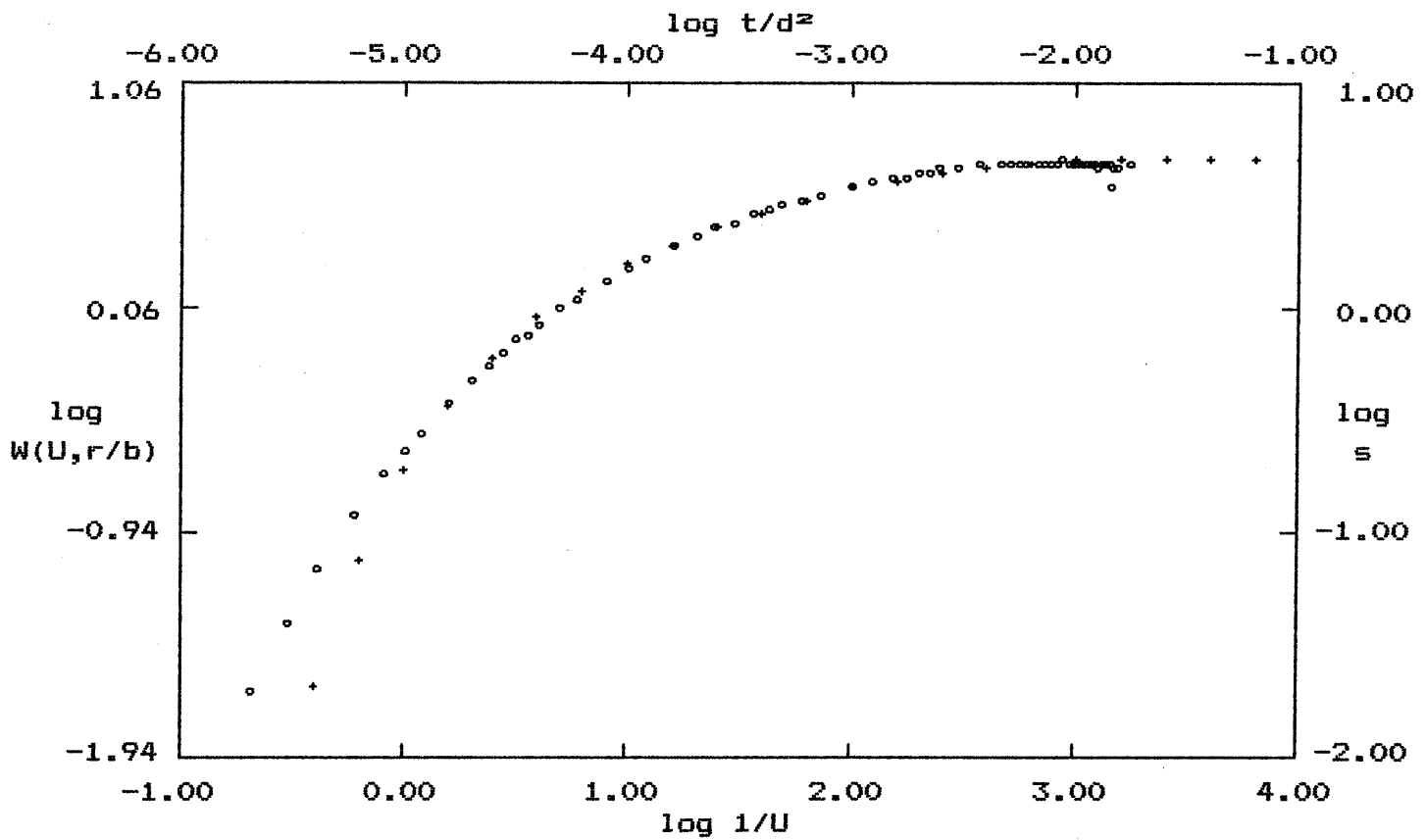
Confined Leaky:  $r/B = 0.20$

## SOLUTION

Transmissivity =  $9.209E+00$  ft.<sup>2</sup>/min. = 99,197 gpd/ft  
 Storativity =  $4.746E-04$

ASSC phase I obs 3

# PUMP TEST DATA



o - Data

+ - Type Curve

Confined Leaky:  $r/B = 0.08$

## SOLUTION

Transmissivity =  $9.209E+00$  ft.<sup>2</sup>/min. = 99,192 gpd/ft  
 Storativity =  $3.684E-04$

*ASSC Phase II obs 2*

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
1	.264	.1404E+05	.3700E-03	.1100E-02
2	.280E-01	.1464E+05	.3405E-03	.2430E-03
4	.197E-01	.1382E+05	.3438E-03	.4030E-03
6	.166E-01	.1382E+05	.3528E-03	.4492E-03
7	.164E-01	.1376E+05	.3588E-03	.4593E-03
8	.164E-01	.1371E+05	.3629E-03	.4698E-03
9	.164E-01	.1368E+05	.3655E-03	.4761E-03
10	.164E-01	.1367E+05	.3672E-03	.4802E-03
11	.163E-01	.1365E+05	.3683E-03	.4827E-03
12	.163E-01	.1365E+05	.3690E-03	.4843E-03
13	.163E-01	.1364E+05	.3694E-03	.4853E-03
14	.163E-01	.1364E+05	.3697E-03	.4859E-03

TERMINATION DUE TO PARAMETER CONVERGENCE

#### FINAL RESULTS

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
14	.163E-01	.1364E+05	.3698E-03	.4859E-03

#### FRACTIONAL COMPONENTS OF FUNCTION VALUE

WELL #	1	2	3
	1.000	.0000	.0000

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

#### SENSITIVITY ANALYSIS

#### TWO STANDARD DEVIATION CONFIDENCE INTERVALS

PARAMETER	VALUE	LOWER LIMIT	UPPER LIMIT
TRANSMISS	.1364E+05	0.1361E+05	0.1367E+05
STORTIVTY	.3698E-03	0.0000	0.1355E-02
SPEC_LEAK	.4863E-03	0.0000	0.2033E-02

TO CONTINUE ENTER "RETURN"

USSC Phase I well 1 (H1231)

$$T = 102,027 \text{ gpd/ft}$$

$$S = 3.698 \times 10^{-4}$$

$$K'/b = 4.859 \times 10^{-4}$$

# OPTIMIZATION BY LEVENBERG-MARQUARDT MINIMIZATION ALGORITHM

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
1	.575	.1283E+05	.3900E-03	.2500E-02
2	.220	.1786E+05	.4479E-03	.2466E-03
4	.475E-01	.1263E+05	.4482E-03	.5150E-03
6	.984E-02	.1240E+05	.4914E-03	.7459E-03
8	.795E-02	.1163E+05	.5581E-03	.9920E-03
10	.793E-02	.1169E+05	.5544E-03	.9827E-03
11	.793E-02	.1170E+05	.5528E-03	.9757E-03

TERMINATION DUE TO PARAMETER CONVERGENCE

## FINAL RESULTS

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
12	.793E-02	.1171E+05	.5526E-03	.9757E-03

## FRACTIONAL COMPONENTS OF FUNCTION VALUE

WELL #	1	2	3
	.0000	1.000	.0000

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

## SENSITIVITY ANALYSIS

## TWO STANDARD DEVIATION CONFIDENCE INTERVALS

PARAMETER	VALUE	LOWER LIMIT	UPPER LIMIT
TRANSMISS	.1171E+05	0.1166E+05	0.1175E+05
STORTIVTY	.5526E-03	0.0000	0.2166E-02
SPEC_LEAK	.9748E-03	0.0000	0.3397E-02

TO CONTINUE ENTER "RETURN"

USSE Phase I well 2 (H4236)

$$T = 127,908 \text{ gpd/ft}$$

$$S = 5.526 \times 10^{-4}$$

$$K/b' = 9.757 \times 10^{-4} \text{ day}^{-1}$$

# OPTIMIZATION BY LEVENBERG-MARQUARDT MINIMIZATION ALGORITHM

ITER	FUNCTION	TRANSMISS	STORTIVITY	SPEC_LEAK
1	.118	.1404E+05	.5000E-03	.1100E-02
2	.405E-01	.1364E+05	.4919E-03	.3960E-03
4	.865E-02	.1338E+05	.4870E-03	.6075E-03
6	.683E-02	.1222E+05	.4873E-03	.7820E-03
8	.624E-02	.1139E+05	.5074E-03	.9574E-03
10	.622E-02	.1141E+05	.5109E-03	.9452E-03
11	.621E-02	.1137E+05	.5120E-03	.9504E-03
12	.621E-02	.1136E+05	.5126E-03	.9541E-03
13	.621E-02	.1135E+05	.5130E-03	.9560E-03
14	.621E-02	.1134E+05	.5132E-03	.9571E-03

TERMINATION DUE TO PARAMETER CONVERGENCE

## FINAL RESULTS

ITER	FUNCTION	TRANSMISS	STORTIVITY	SPEC_LEAK
14	.621E-02	.1134E+05	.5133E-03	.9571E-03

## FRACTIONAL COMPONENTS OF FUNCTION VALUE

WELL #	1	2	3
	.0000	.0000	1.000

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

## SENSITIVITY ANALYSIS

## TWO STANDARD DEVIATION CONFIDENCE INTERVALS

PARAMETER	VALUE	LOWER LIMIT	UPPER LIMIT
TRANSMISS	.1134E+05	0.1128E+05	0.1140E+05
STORTIVITY	.5133E-03	0.0000	0.2501E-02
SPEC_LEAK	.9576E-03	0.0000	0.3402E-02

TO CONTINUE ENTER "RETURN"

*USSC Phase I well 3 (HM 237)*

*T = 84,823 gpd/ft*

*S = 5,133 x 10<sup>-4</sup>*

*K<sub>b</sub>' = 9.571 x 10<sup>-1</sup> day<sup>-1</sup>*

# OPTIMIZATION BY LEVENBERG-MARQUARDT MINIMIZATION ALGORITHM

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
1	.114	.1134E+05	.5133E-03	.9576E-03
3	.406E-01	.1282E+05	.4805E-03	.7339E-03
5	.371E-01	.1263E+05	.4720E-03	.7384E-03
7	.369E-01	.1269E+05	.4695E-03	.7350E-03
9	.369E-01	.1269E+05	.4687E-03	.7334E-03

TERMINATION DUE TO PARAMETER CONVERGENCE

## FINAL RESULTS

ITER	FUNCTION	TRANSMISS	STORTIVTY	SPEC_LEAK
9	.369E-01	.1269E+05	.4685E-03	.7334E-03

## FRACTIONAL COMPONENTS OF FUNCTION VALUE

WELL #	1	2	3
	.5363	.2762	.1874

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

## SENSITIVITY ANALYSIS

### TWO STANDARD DEVIATION CONFIDENCE INTERVALS

PARAMETER	VALUE	LOWER LIMIT	UPPER LIMIT
TRANSMISS	.1269E+05	0.1266E+05	0.1271E+05
STORTIVTY	.4685E-03	0.0000	0.1289E-02
SPEC_LEAK	.7331E-03	0.0000	0.1928E-02

TO CONTINUE ENTER "RETURN"

USSC Phase I all wells

$$T = 94,921 \text{ gpd/ft}$$

$$S = 4.685 \times 10^{-4}$$

$$K'/b = 7.334 \times 10^{-4} \text{ day}^{-1}$$