APPENDIX P TABLE OF CONTENTS

FIGURES

GEOLOGIC LOGS

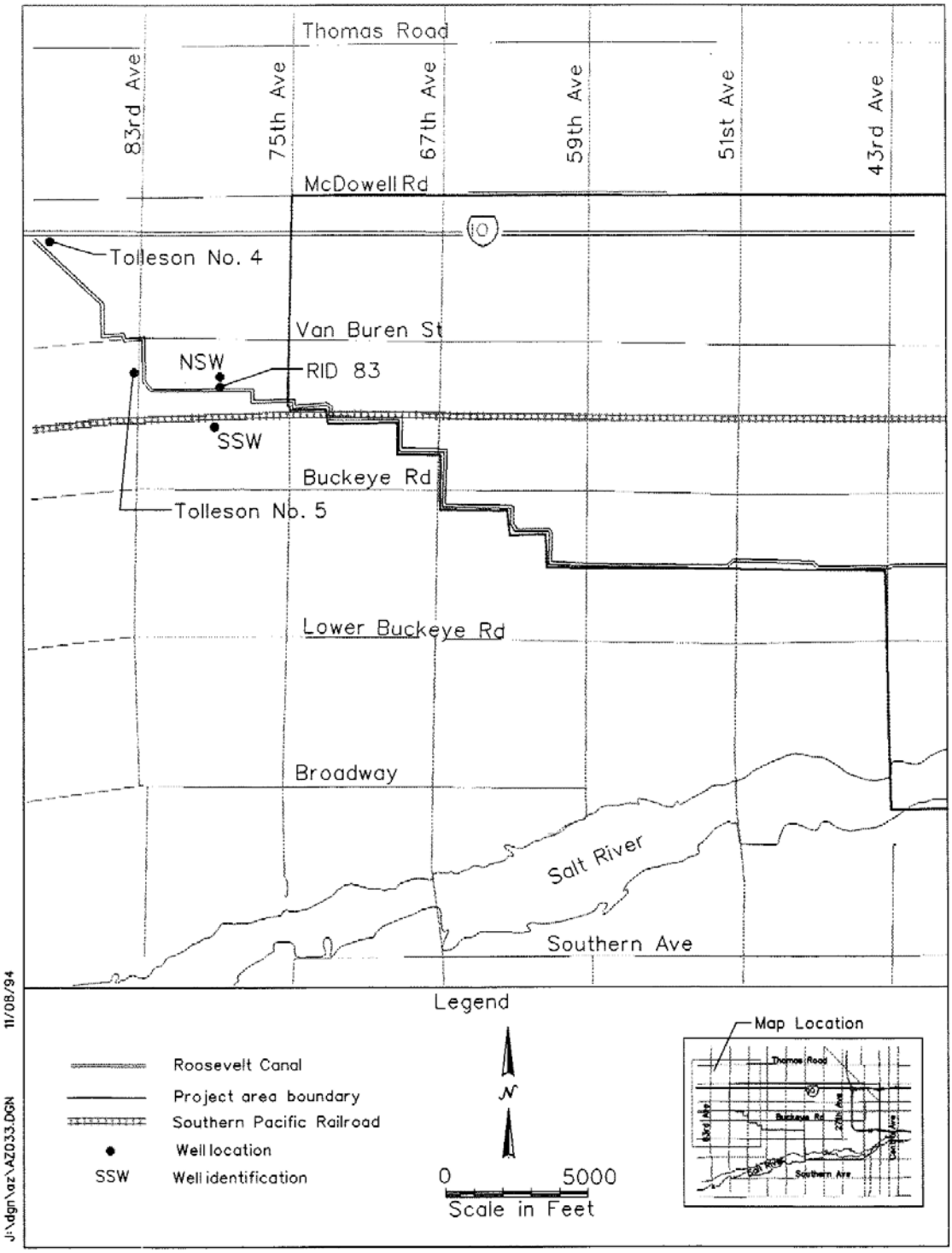


Figure P-1 Site Location Map

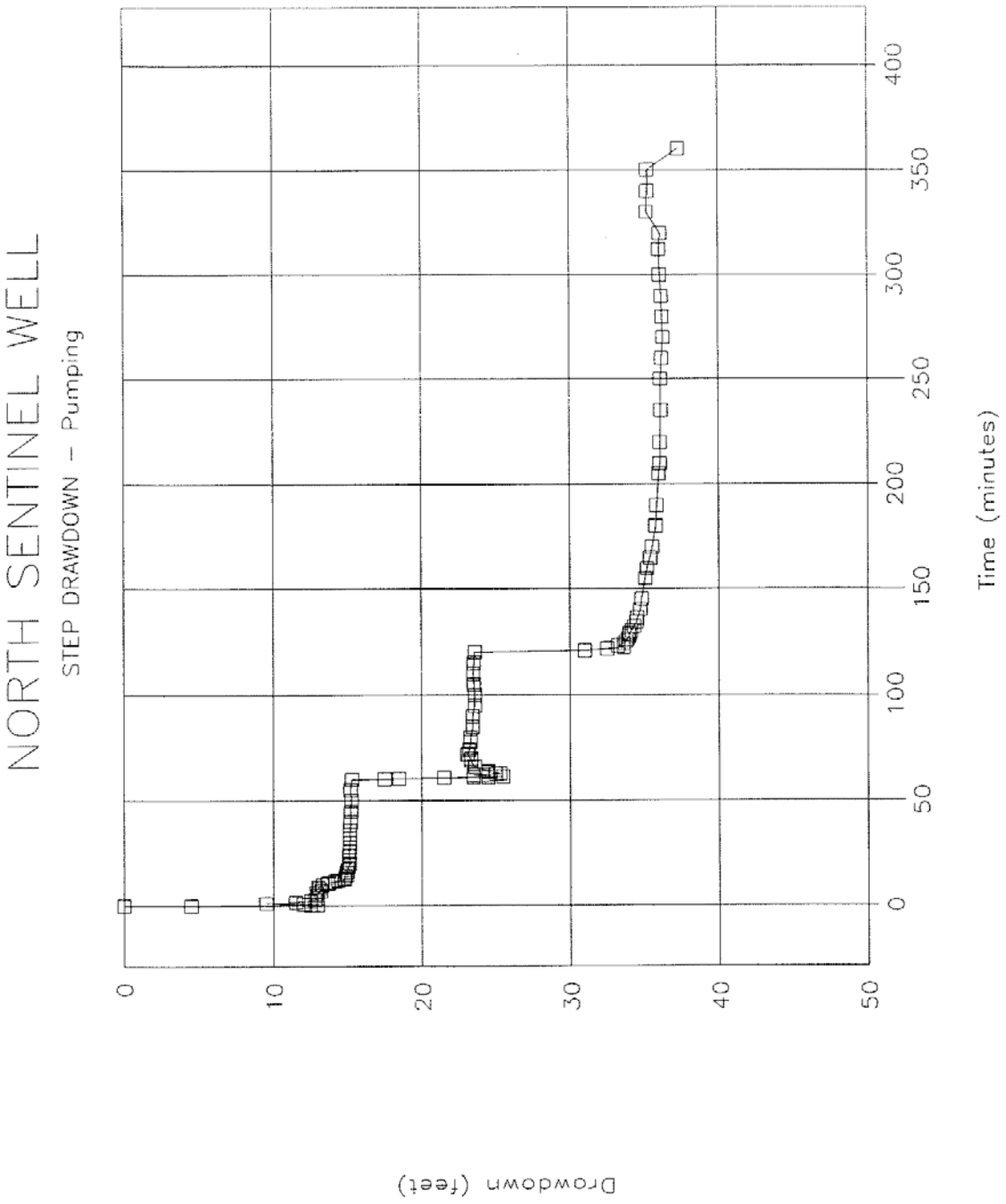


Figure P-2 Step Drawdown Test — Drawdown vs Time Plot

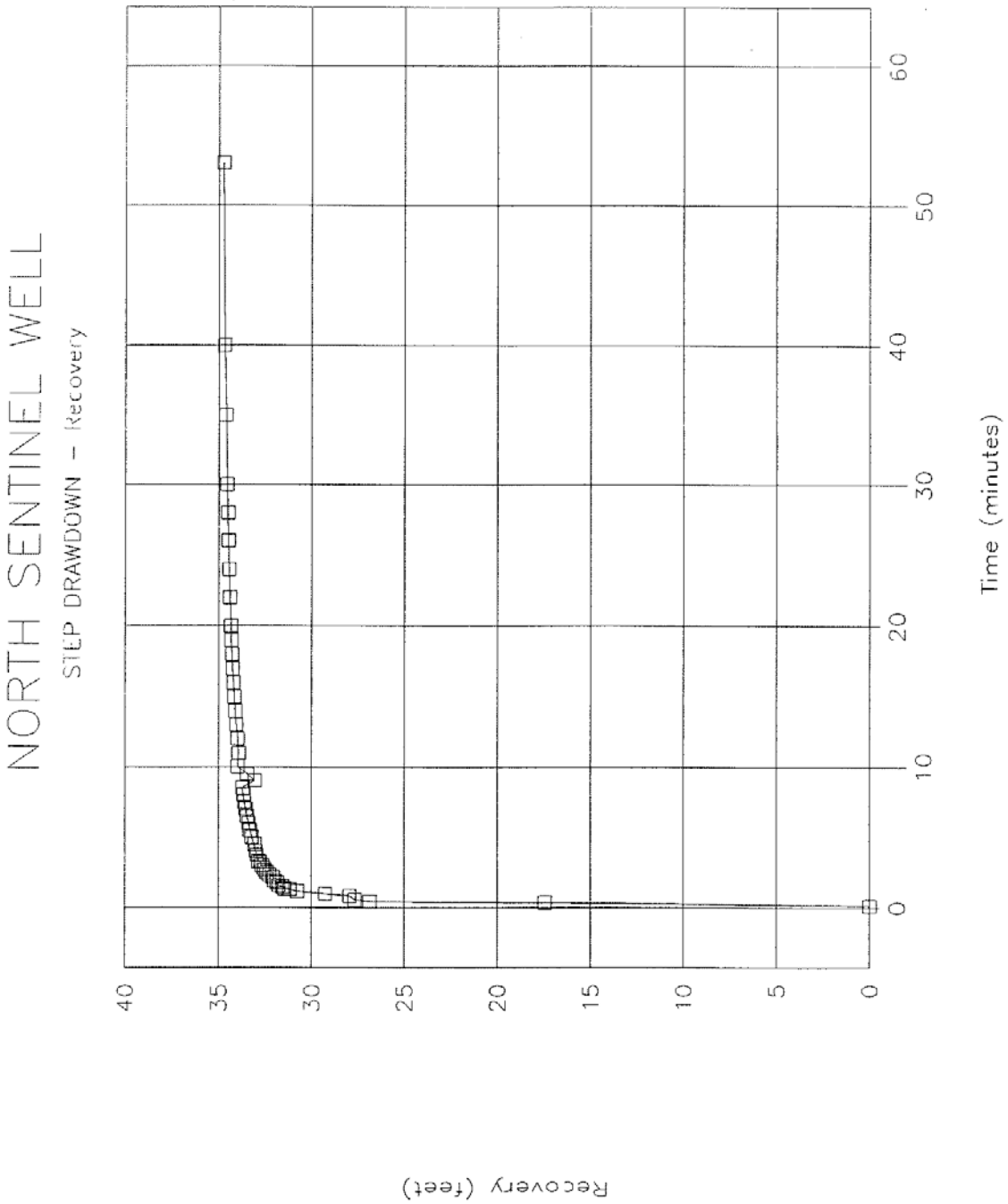


Figure P-3 **Step Drawdown Test — Recovery vs Time Plot**

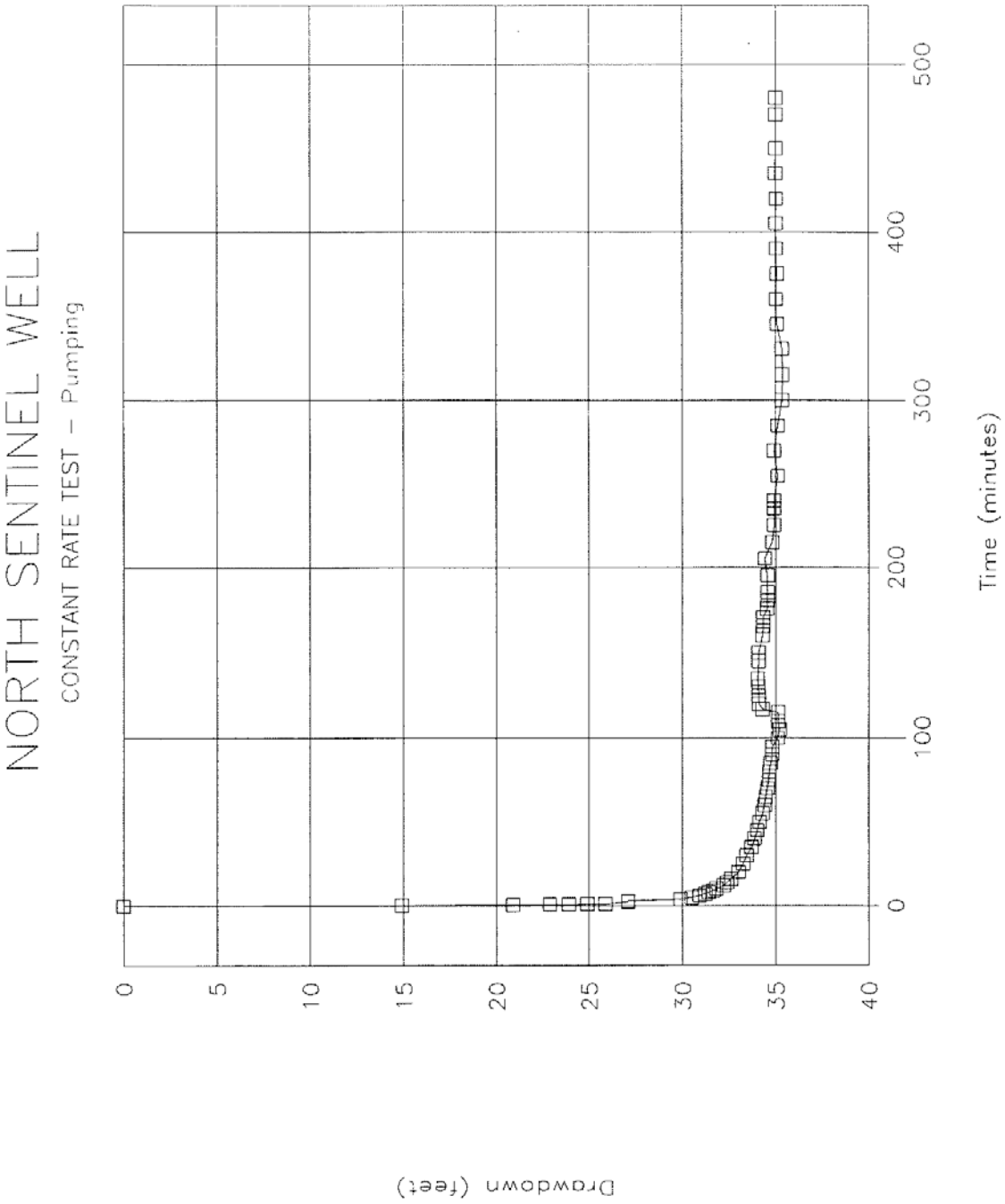


Figure P-4 Constant Rate Test — Drawdown vs Time Plot

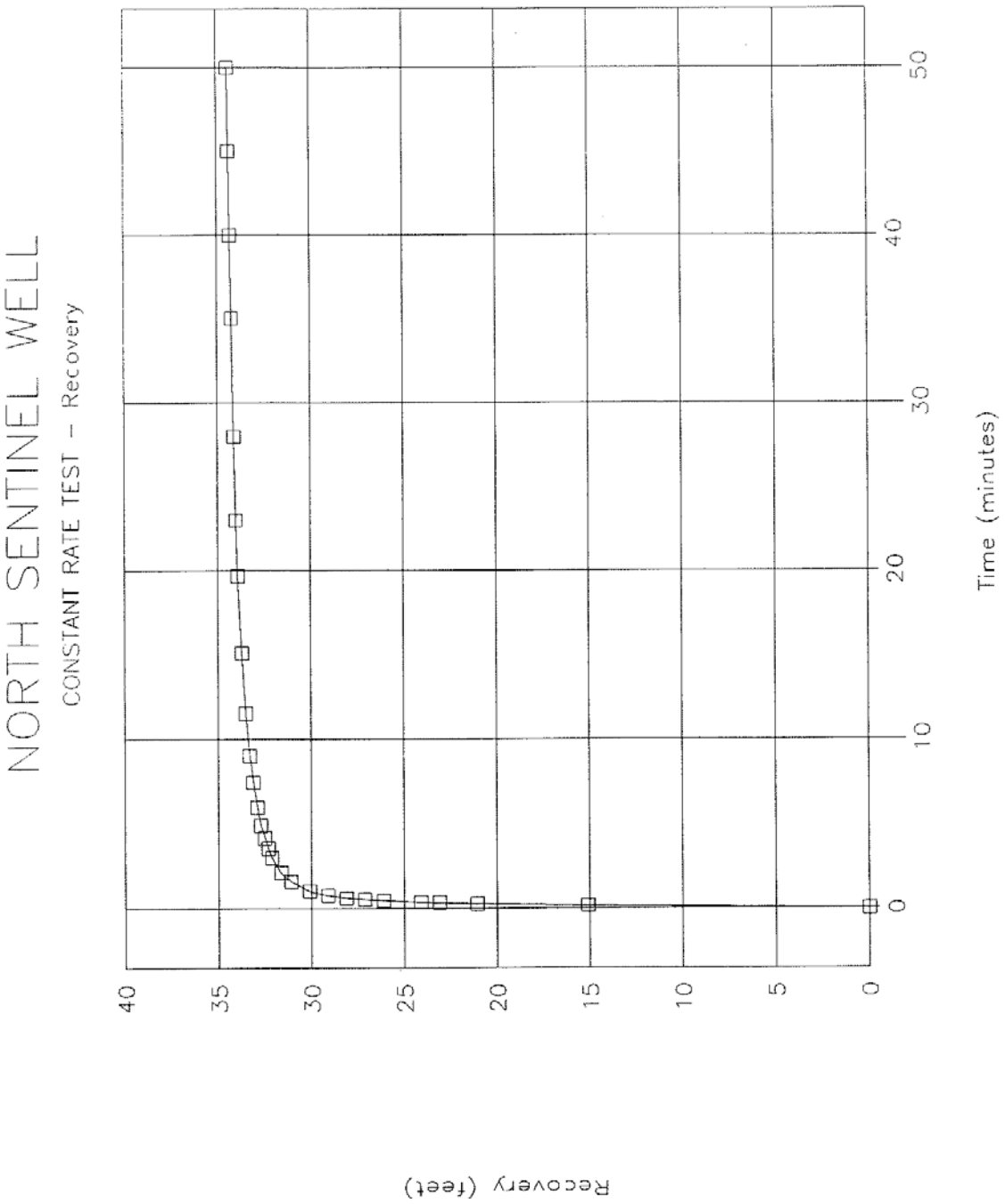


Figure P-5 Constant Rate Test — Recovery vs Time Plot

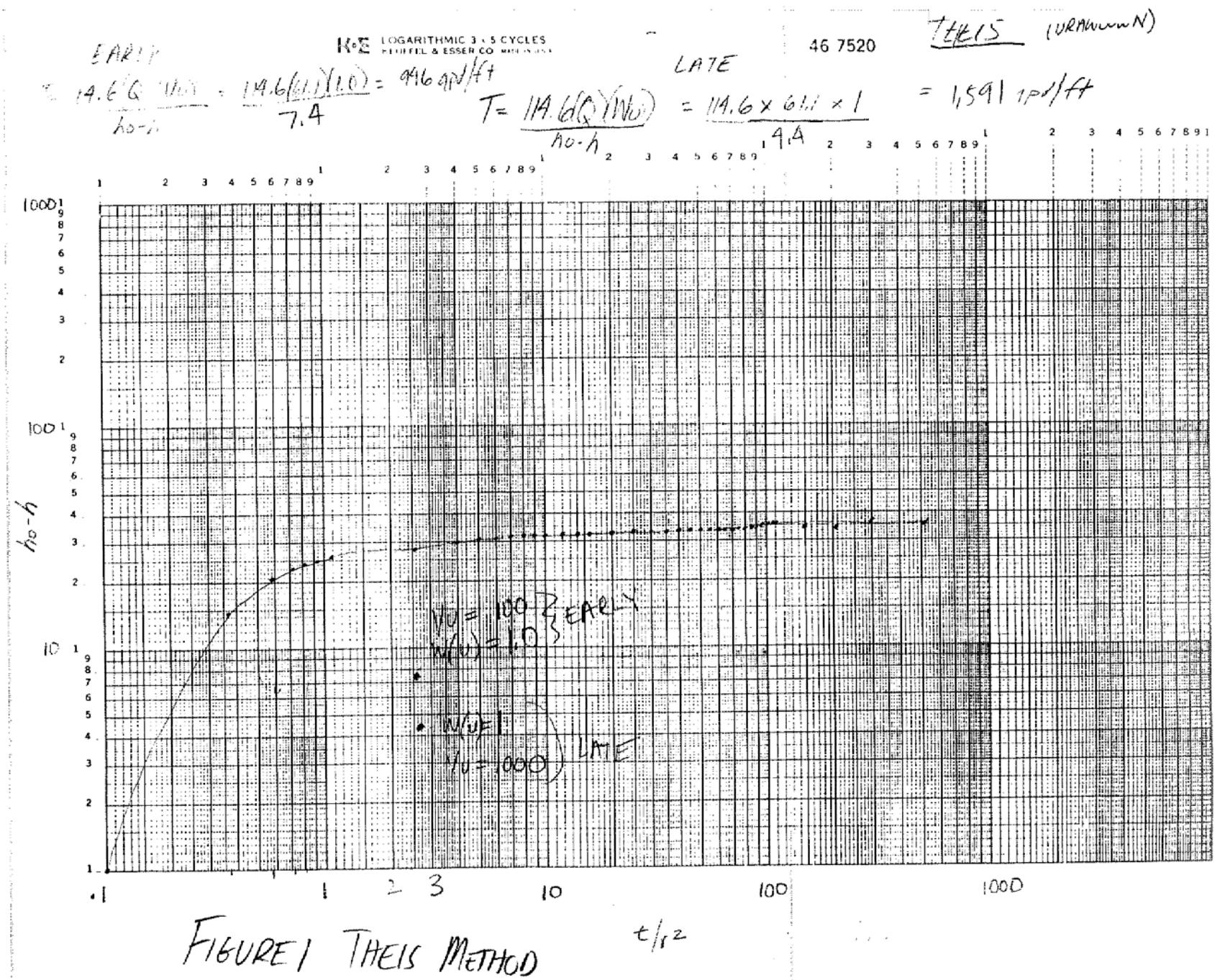
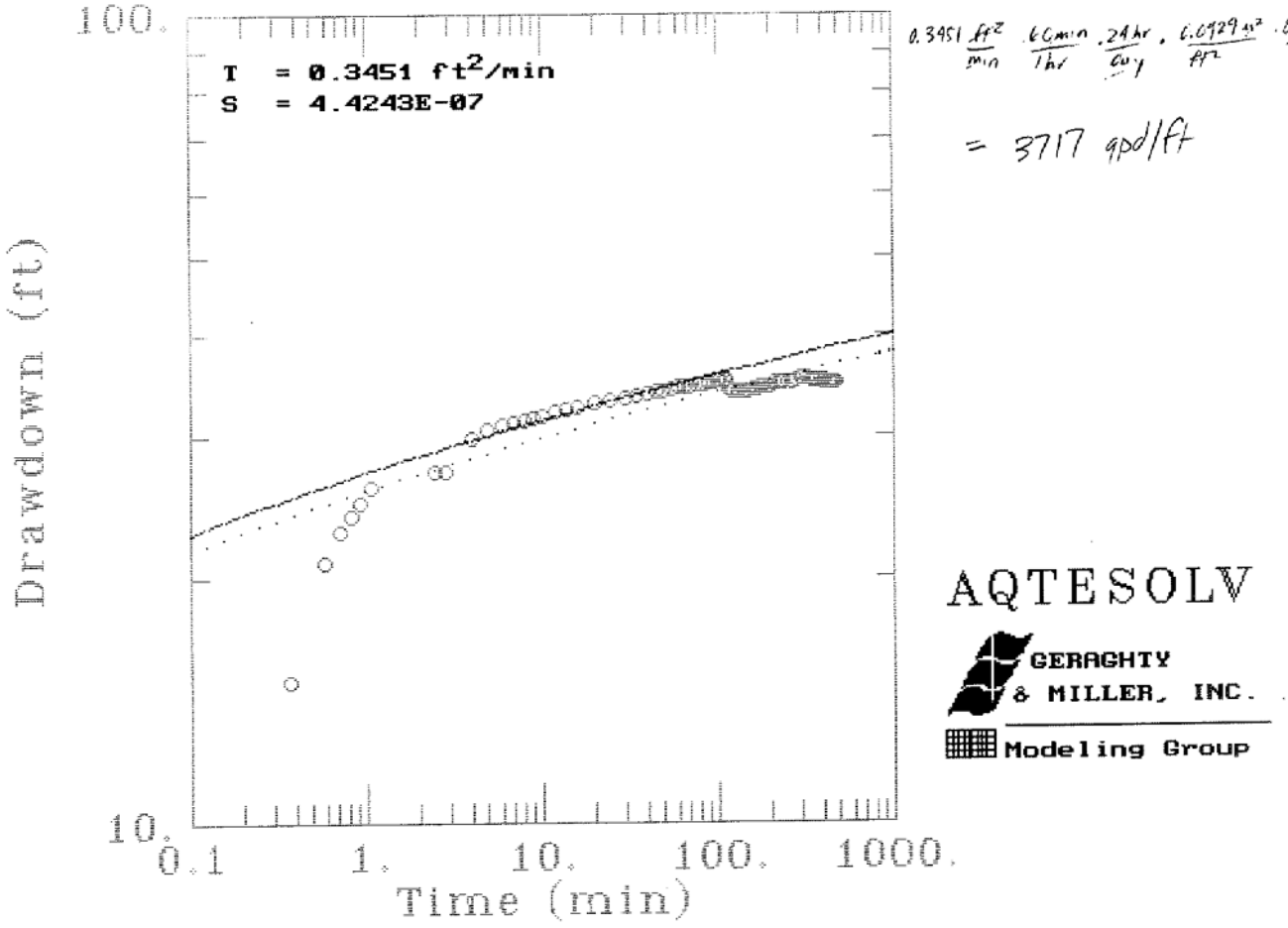

K&E LOGARITHMIC 3 x 5 CYCLES
KEUFFEL & ESSER CO
46 7520
THEIS (URANIUM N)
EARLY
T = 114.6Q(W(u)) / h0-h = 114.6(61.1)(1.0) / 7.4 = 946 gpd/ft
LATE
T = 114.6Q(W(u)) / h0-h = 114.6 x 61.1 x 1 / 4.4 = 1,591 gpd/ft
h0-h
t/r2
W(u)=100 } EARLY
W(u)=1.0
W(u)=1 } LATE
u=1000
FIGURE 1 THEIS METHOD

Figure P-6

FIGURE 2 THEIS METHOD

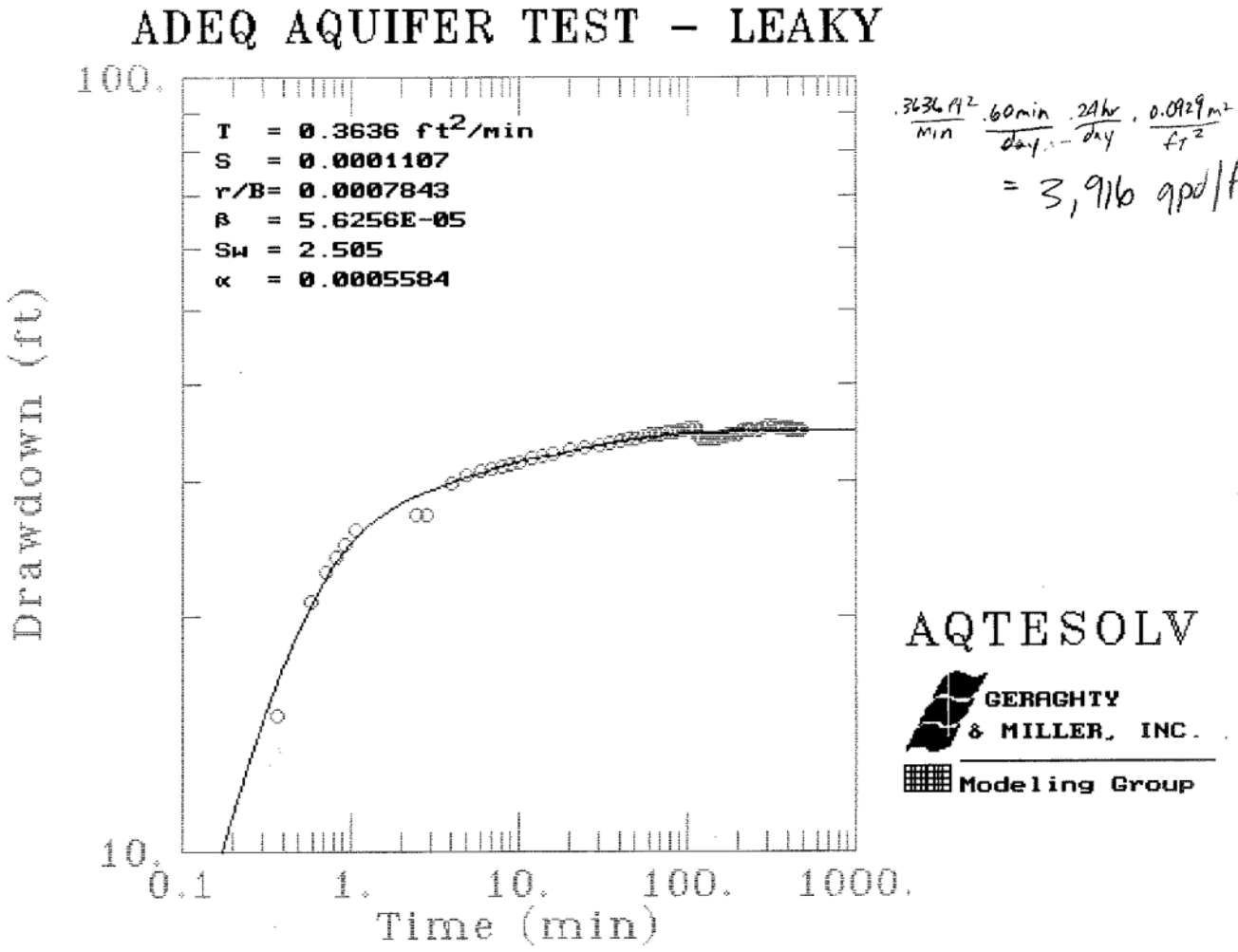


$0.3451 \frac{ft^2}{min} \cdot \frac{60 min}{hr} \cdot \frac{24 hr}{day} \cdot \frac{0.0929 m^2}{ft^2} \cdot \frac{80.52 gpd/ft}{\frac{m^2}{day}}$

= 3717 gpd/ft

Figure P-7

Figure 3 Moench Solution for Leaky Aquifers



$\frac{.3636\ ft^2}{min} \cdot \frac{60\ min}{day} \cdot \frac{24\ hr}{day} \cdot \frac{0.0929\ m^2}{ft^2} \cdot \frac{80.52\ gpd/ft}{m^2/day}$

= 3,916 gpd/ft

Figure P-8

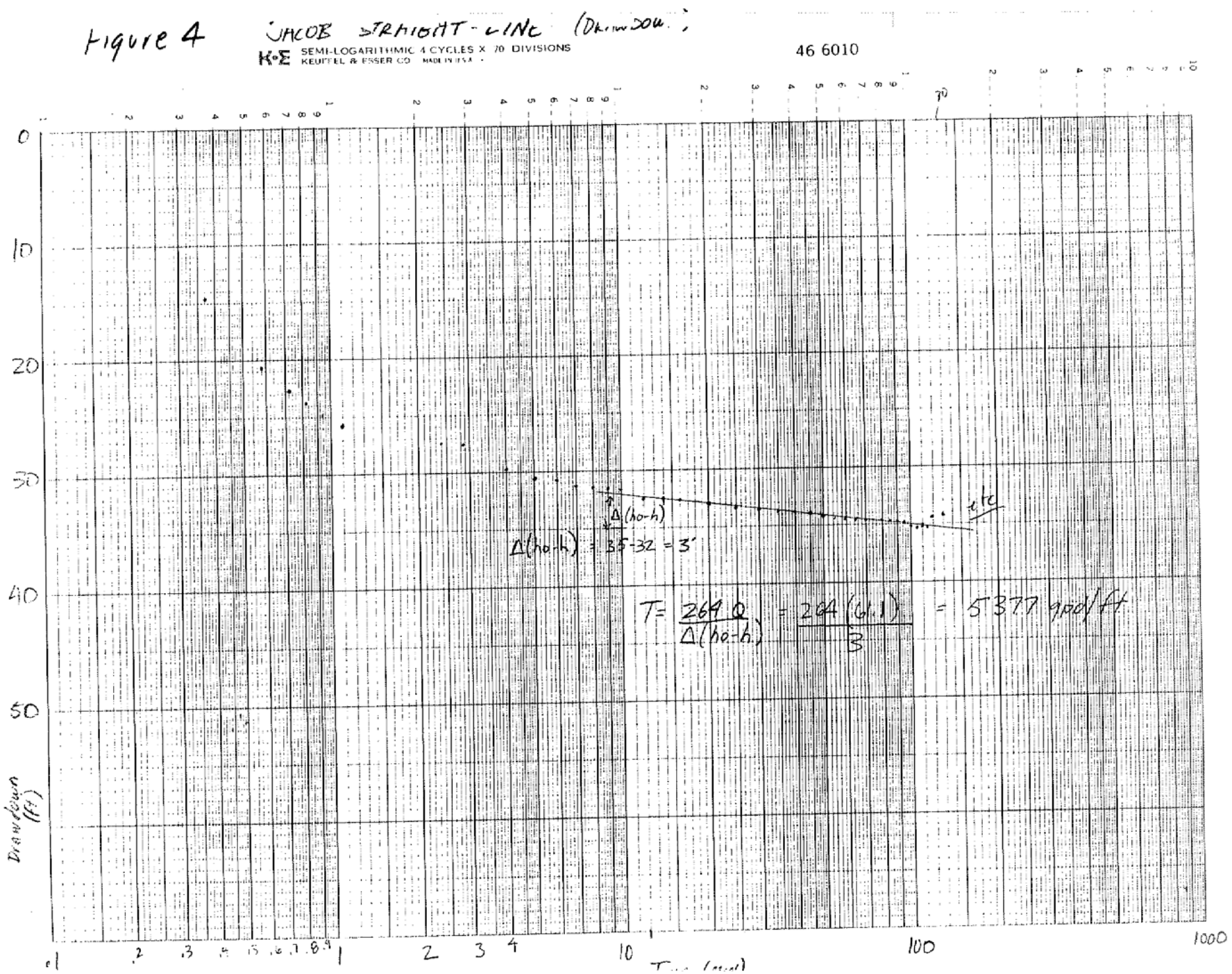
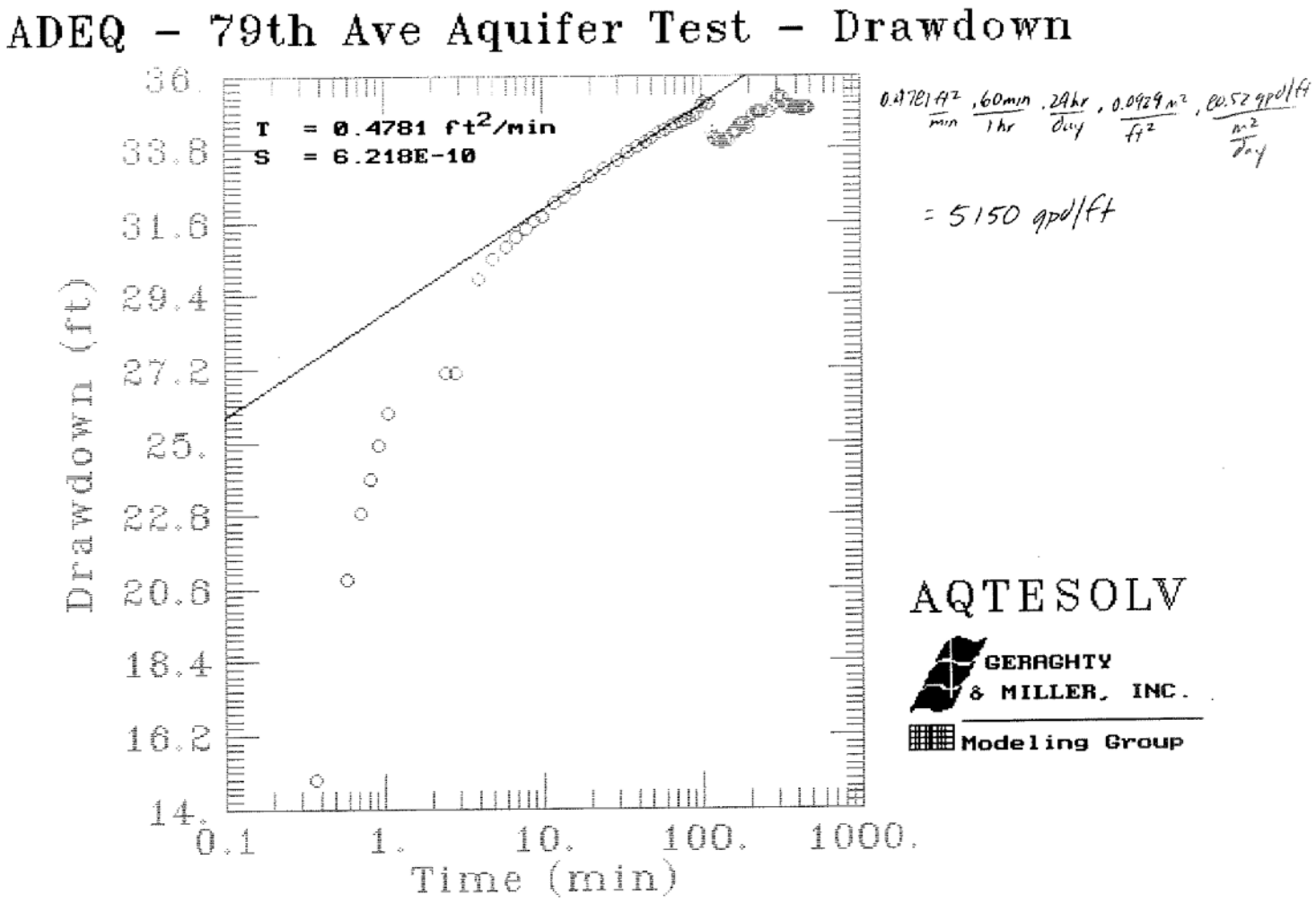


Figure 4 JACOB STRAIGHT-LINE (Drawdown)
K&E SEMI-LOGARITHMIC 4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.
46 6010
Drawdown (ft)
0
10
20
30
40
50
1
2
3
4
10
100
1000
Δ(ho-h)
Δ(ho-h) = 35-32 = 3'
T = 264 Q / Δ(ho-h) = 264 (6.1) / 3 = 5377 gpd/ft

Figure P-9

Figure 5 Jacob-Cooper Straight Line



$0.4781 \frac{ft^2}{min} \cdot \frac{60 min}{1 hr} \cdot \frac{24 hr}{day} \cdot \frac{0.0929 m^2}{ft^2} \cdot \frac{80.52 gpd/ft}{\frac{m^2}{day}}$

= 5150 gpd/ft

Figure P-10

Figure 6 Papadopulos-Cooper Solution

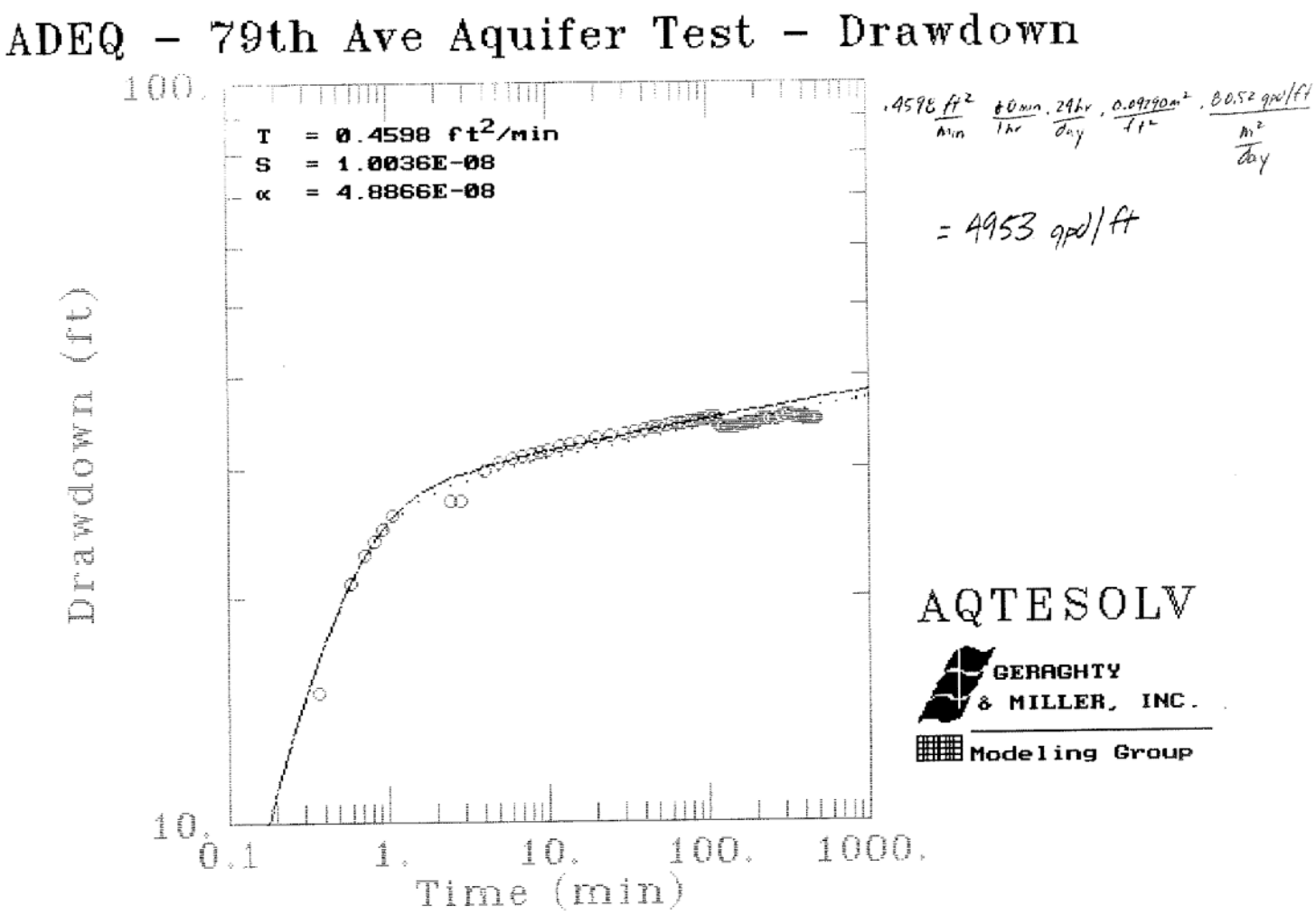


Figure P-11

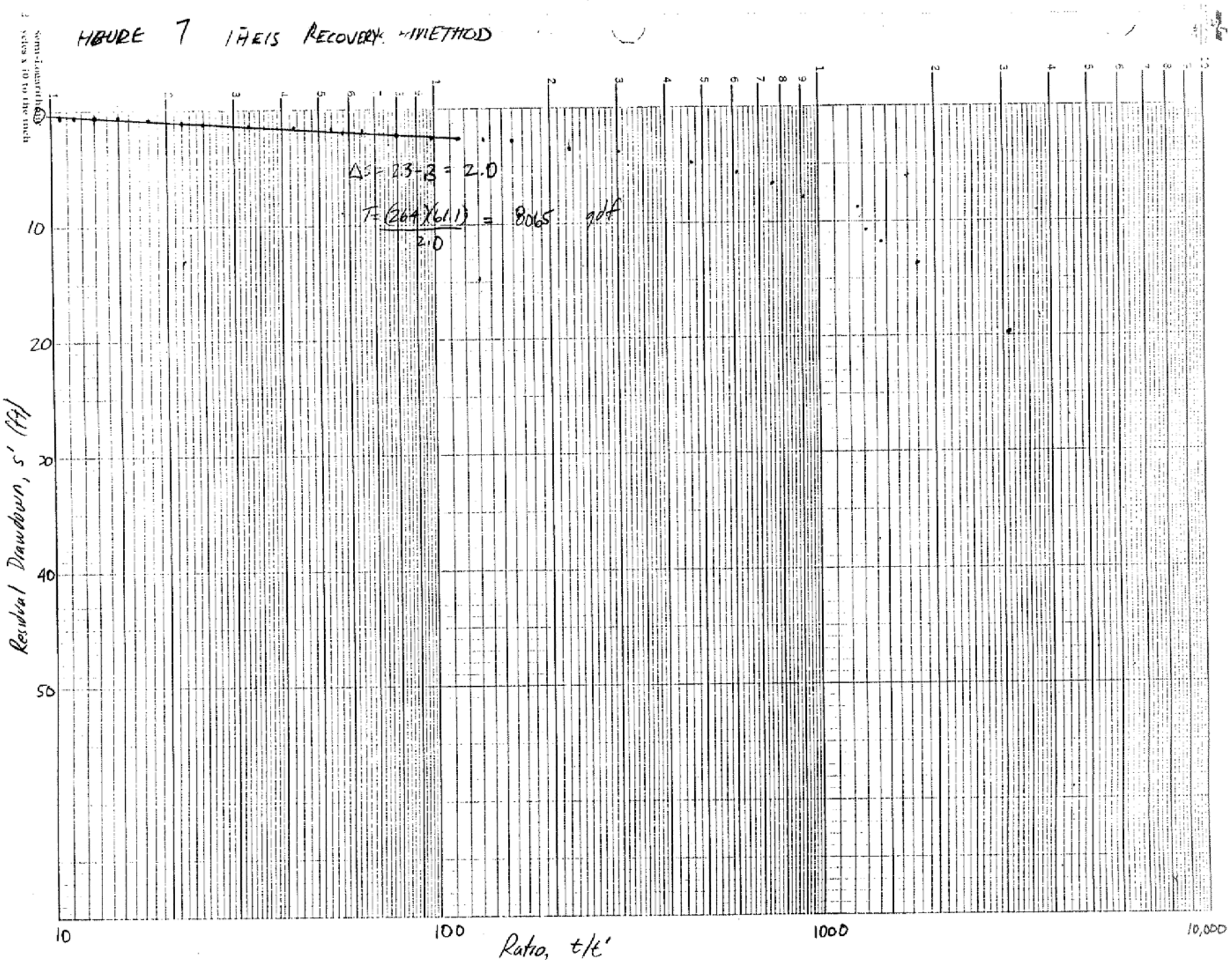
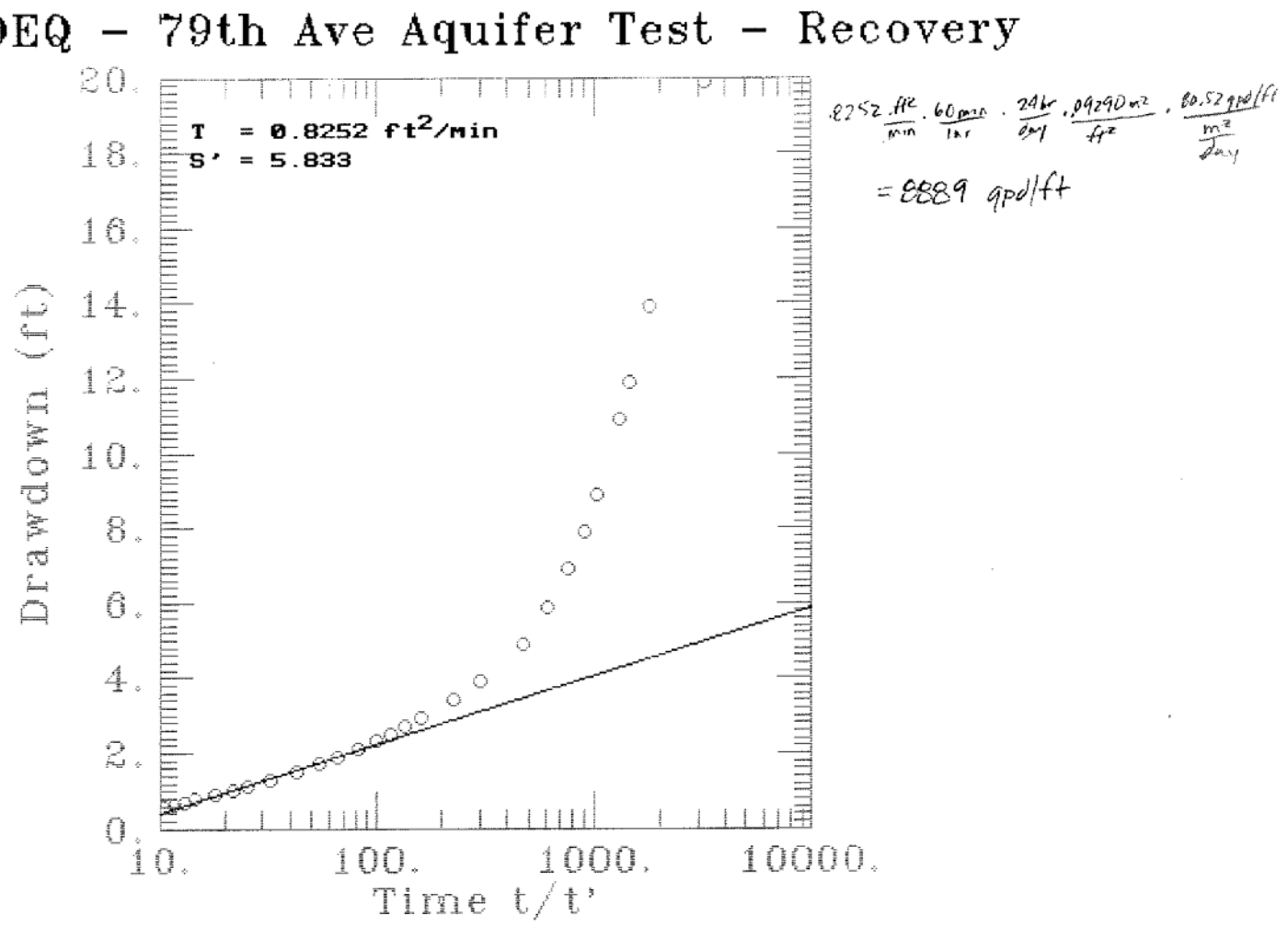


FIGURE 7 THEIS RECOVERY METHOD
Δs = 23-3 = 2.0
T = (264 X 611) / 2.0 = 8065 gpd
Residual Drawdown, s' (ft)
10
20
30
40
50
10
100
1000
10,000
Ratio, t/t'

Figure P-12

Figure 8 - Theis Recovery Method



$0.8252 \frac{ft^2}{min} \cdot \frac{60 min}{1 hr} \cdot \frac{24 hr}{day} \cdot \frac{.0929 m^2}{ft^2} \cdot \frac{80.52 gpd/ft}{\frac{m^2}{day}}$

= 8889 gpd/ft

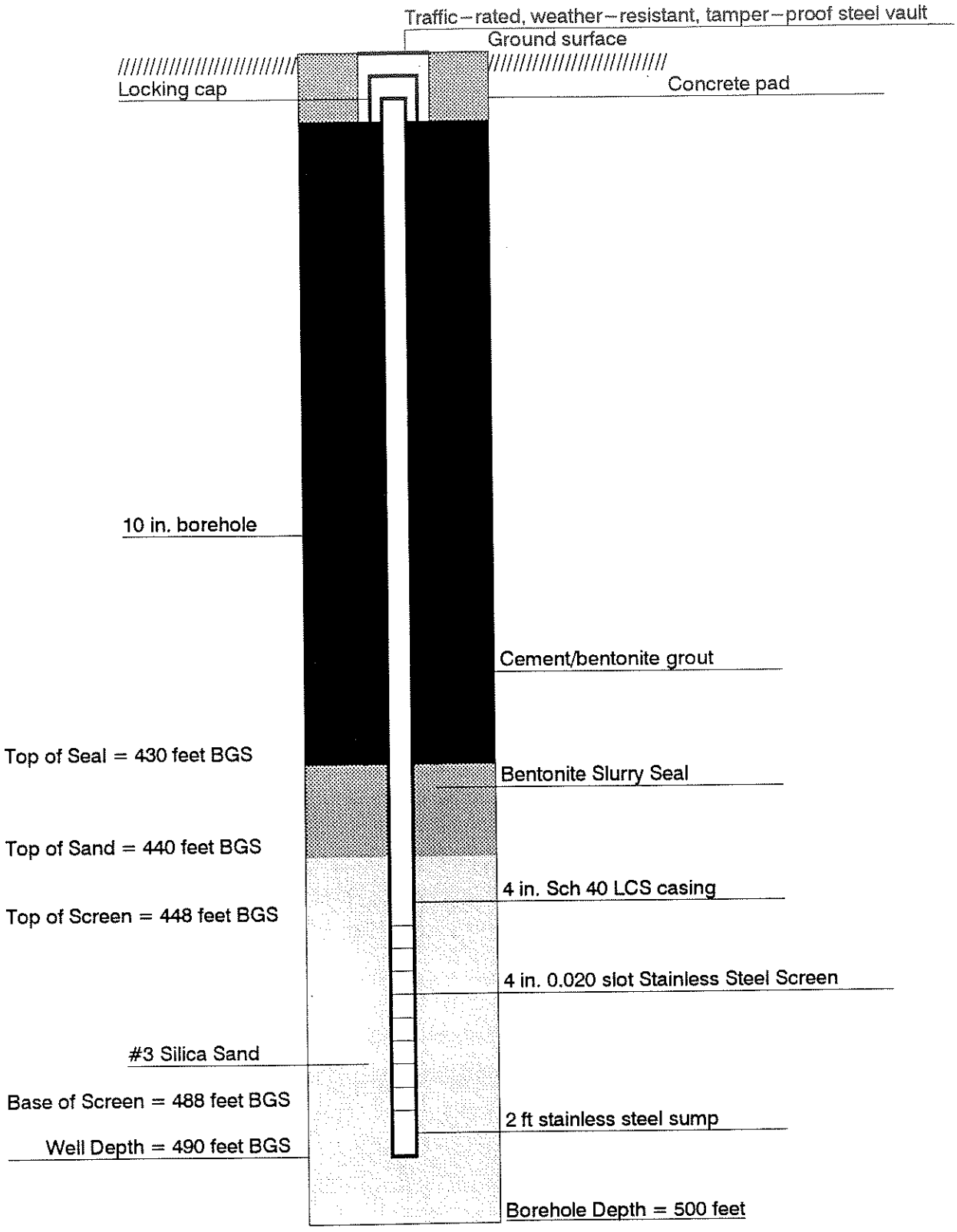
Figure P-13

GEOLOGIC LOG	ADEQ	West Van Buren Area	
Well ID:	North Sentinel Well (NSW)	Location:	SRP West Valley Maintenance parking lot
Northing (ft):	890626.7957	Drilling Co:	Layne Environmental Services
Easting (ft):	404912.2565	Drilling Method:	Air percussion
Total Depth (ft):	500	Drilling Fluid:	Air
Top of Casing Elev (ft):	1028.50	Date Started:	20 Jun 94
Ground Surface Elev (ft):	1028.79	Date Finished:	23 Jun 94
		Logged by:	Jan Curtis and Rich Petrus
Comments: Southern portion of the paved parking lot at 79th Avenue and W. Van Buren.			

INTERVAL (FT)	USCS	VISUAL DESCRIPTION
0-15	ML	Light brown silt (75%) and clay (25%). Low plasticity, dry, loose.
15-30	ML	Light brown silt (95%) and clay (5%), non-plastic, dry, loose, moist.
30-40	SM	Light brown coarse to fine gravel. 20% gravel, 50% sand, and silt (30%). Poorly sorted, non plastic, damp.
40-50	MH	Dark brown silt (80%) and clay (20%), damp, soft.
50-60	SM	Dark brown sand (70%), silt (20%) and clay (10%). Poorly sorted, low plasticity, wet at 55 feet.
60-70	SM	Sand and silt mixture to 65 feet. Fining to silts and clays from 65-70 feet, wet at 60-62 feet.
70-80	MH	Dark brown silt (70%) and clay (30%). Low plasticity, saturated.
80-90	SM	Dark brown sand (40%), silt (40%) and clay wet. Poorly sorted, low plasticity. Coarse sand at 89.5 - 90 feet.
90-100	SM	Same as above.
100-110	CH	Dark brown clay (70%) and silt (30%), high plasticity, stiff, wet.
110-120	CH-CL	Dark brown silt (50%) and clay (50%), stiff, high plasticity.
120-140	CH	Dark brown clay (80)%) and silt (20%), high plasticity, stiff, wet.
140-210	CH	Dark brown clay (90%), silt (10%), wet.
210-220	CH	Same as above with few large cobbles.

220-230	CH	Same as 140-120 feet, with (5%) gravel, no cobble.
230-250	CL	Silty clay, caliche.
250-260	GW	Cobbles with sand and gravel, hard, slow drilling.
260-270	CL	Brown clay and caliche.
270-278	CL	As above with cemented sand.
278-280	SP	Coarse sand.
280-295	CL/SP	Brown clay and caliche, some cemented sand.
295-302	SP	Sandstone, tan to medium brown, soft to medium hard, weathered, fine to medium grained, trace gravel.
302-310	SW	Brown sand, some gravel, trace silt, well graded, fine to medium grain, gravel up to 0.25.
310-320	CL	Brown clay (90%), silt 10%, plastic, trace sand.
320-338	CL	Brown clay, trace silt, dry, lithified in places. Siltier with depth.
338-350	SP	Poorly graded, medium sand and gravel, reddish brown, cobbles to 3 inches. Wet, lots of water.
350-360	SW	Well graded gravel (70%) and sand (25%), wet, lots of water, 5% fines.
360-370	CL/SP	Interbedded medium brown clay and tan cemented v. fine-grained sand.
370-380	SW	Well graded gravel (70%) and sand (25%), wet, lots of water, 5% fines.
380-390	SP	Sand (70%) medium grained, some gravel, reddish brown. Gravel up to 2" in diameter, wet, lots of water.
390-402	SW	Well graded fine to medium grained sand, some silt, trace gravel and clay, lithified in places, subround to round.
402-410	CL/SM	Interbedded silty clay and very fine grained silty sandstone, friable, wet to moist.
410-420	SW	Reddish brown medium sand with gravel and cobbles, 10% silt. Lots of water.
420-430	SM	Upper 5 feet is weakly cemented brown slightly silty sandstone. Lower 5 feet is poorly graded sand.
430-440	SW	Sand, fine to medium grain, slightly silty, micaceous, subangular to subround. Trace gravel.
440-450	SW	Sandstone, very fine to medium grained, tan to medium brown, soft.
450-457	SW	Sandstone, fine grained, silty, soft to medium hard, slightly micaceous, trace gravel.

457-470	SC	Sand, fine grained, poorly graded, round, wet, micaceous, with interbedded medium brown silty clay (dry).
470-495	SC/SP	Interbedded silty clay and fine grained quartzitic sandstone.
495-500	SP	Fine sand and gravel. Poorly graded. Granitic and micaceous. Saturated and flowing. Producing water. Total depth 500 ft.



MSL – Mean Sea Level
BGS – Below Ground Surface

North Sentinel Well Construction Diagram