74/7

RECORDS

Rept.Bk.No.74/7

Depot.

MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL

COMPLETION REPORT

SEC. Pt. 84, Hundred of Adelaide SHEET N/3 BORE 92

- Public Buildings Dept. -

M.A. COBB

Department of Mines
South Australia —

74/7

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
ENGINEERING DIVISION

MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL
COMPLETION REPORT

Pt. 84, Hundred of Adelaide

by

M.A. COBB
GEOLOGIST
HYDROGEOLOGY SECTION

Rept.Bk.No.74/7
G.S. No. 5323
Hyd. No. 2611
DM. No. 1797/68

9th January, 1974

CONTENTS

PLANS

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No.74/7
G.S. No. 5323
Hyd. No. 2611
DM. No. 1797/68

MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL
COMPLETION REPORT

Pt. 84, Hundred of Adelaide

Client: Public Buildings Department
Victoria Square
ADELAIDE, 5000

LOCATION

General:	Adjacent Marion Road, Mitchell Park
Region:	4
County:	Adelaide
Hundred:	Adelaide
Section:	Pt.84
State Number:	771202092

INTRODUCTION

In 1969 the Department of Mines attempted to rehabilitate an existing bore at the school which had been infilled to near surface by various debris. After cleaning out, an attempt was made to develop the bore but the continued influx of a fine silty sand (coming down from behind the casing) led to the bore's abandonment.

A letter from the Public Buildings Department dated 5th February, 1973 requested this Department to sink and test a replacement bore. This report summarises the bore construction and its hydrogeological environment and the results of the pump testing.

CONSTRUCTION DETAILS

Drilling, using a cable tool drilling rig, commenced on the 18th June, 1973 and was completed by the 2nd July, 1973. The bore was drilled 8 inch initially to 70.0 metres (m), with 8 inch casing being set at 43.2 m below ground level. The bore was then developed by 2 hours of bailing. The entry of sand in the bottom section of the hole necessitated backfilling with sand, with a cement plug set from 49.0 m to 51.0 m. Thus the present bore is open hole from 43.2 m to 49.0 m.

For air development 6 inch casing was run to 36.0 m and 1½ inch air pipes were set at 32.0 m. The bore was then developed for a total of 13½ hours at an average rate of 7.5 litres per second (l/s) or 6 000 gallons per hour (g.p.h.). Prior to the pump test the bore was further developed by pumping for a further 36 hours (see later).

A sketch of the bore's construction details is given in Figure 2.

HYDROGEOLOGY

During drilling, sludge samples were collected at 2 m intervals or on a change of lithology noted by the driller. A log combining the driller's log and the lithological log obtained from examination of the sludge samples is given in Appendix A.

Drilling ceased on reaching the Munno Para Clay Member of the Port Willunga Beds. The latter is the aquifer under development and occurred from 43 m to 69.2 m. It is dominantly a calcareous sandstone or a quartzose calcarenite, off white to grey-brown containing many shell fragments and spicular material.

This is overlain by a sequence of sands and clays probably representing Hindmarsh Clay equivalent (outwash slope deposits) over Carisbrooke Sands. The Hindmarsh Clays contain the water table which was cut at 7.20 m with groundwater salinity being recorded at 6 215 milligrammes per litre (mg/l).

Additional water cuts were recorded by the driller at 17, 29.4 and 43.0 m all of which were under pressure rising up to within 20 m of the surface. The general salinity of the aquifer under development is 1 100 mg/l (see Appendix B).

WATER SAMPLING

During drilling water samples were collected when water cuts were recorded and analysed for approximate total dissolved salts.

Similarly during development and the pumping tests samples were collected at regular intervals and subsequently tested. A sample at the end of the main test was forwarded to the laboratories at AMDEL for a full analysis. A resumé of the groundwater chemistry results is given in Appendix B.

PUMPING TESTS

Prior to the carrying out of pumping tests the bore was further developed by pumping for 36 hours using a 5 inch, 12 stage Pomona turbine pump set at 33 m. Average development pumping rate was 7.5 l/s (6 000 g.p.h.). The bore was then subjected to a 3-stage step-drawdown test, followed by a 720 minute constant rate pump test.

The 3-stage step-drawdown pumping tests commenced on the 16th July, 1973 and were completed on the 17th July, 1973. Each stage was of 100 minutes duration with recovery periods of at least 100 minutes between stages. Graphs of drawdown in metres (St) against $\log_{10} t$ (t = minutes) for each stage are given in Figure 3.

Each straight line graph is characterised by an equation of the form:

$St = (a + b \log t)Q + CQ^2$

where St = drawdown in metres

t = time in minutes

Q = pumping rate m^3/sec

a, b = constants related to laminar flow (sec/m^2)

C = constant related to turbulant flow in the aquifer, pump and bore column (sec^2/m^5)

Thus the slope of the line is given by bQ and the intercept by $aQ + CQ^2$. Results for the three stages and for the early part of the main test are given below.

Stage I	b = 270	a + 0.00411C = 462
Stage II	b = 270	a + 0.00528C = 500
Stage III	b = 320	a + 0.00621C = 444
Early part of main test	b = 330	a + 0.00759C = 482

Solving equations simultaneously using combinations of Stage I with Stage II and Stage III with the main test the following average values for the constants are obtained.

a = b = 300

$C = 3 \times 10^4$

Using other equation combinations leads to negative or low values of C and thus it is assumed that some development of the bore took place between stages II and III. Indeed the value of C obtained from Stage III and the main test was somewhat lower than that obtained from Stages I and II.

Using these values an equation for the early drawdowns expected in the bore at different pumping rates is given by:

$$St = (300 + 300 \log t)\, Q + 3 \times 10^4\, Q^2$$

where the symbols are as previously defined.

This has been used to construct graphs of anticipated drawdown, assuming no hydrogeological boundaries, which have been given in Figure 5. The values of drawdown are measured from the pre-pumping water level not the ground level.

A main pump test of 720 minutes duration followed the step drawdown test and a plot of drawdown against the logarithm (base 10) of time is given in Figure 4. The graph flattens out but becomes somewhat erratic after 10 minutes of pumping at an average rate of 7.59 l/s (6 020 g.p.h.). Collected data does not suggest a varying pumping rate as the cause for this erratic behaviour. However, no hydrogeological boundaries likely to cause increased rates of drawdown were encountered during the 12 hours of pumping. Indeed this graph suggests that some form of "recharge" is met and is probably the effect of leakage from overlying finer grained material. By substituting values of Q and t characteristic of the main test into the above equation, values of drawdown obtained are those expected by extrapolation of the early part of the graph i.e. the equation does not account for the recharge boundary and hence gives larger drawdowns for long times than those actually experienced.

A useful tool in the simple prediction of anticipated drawdowns at different pumping rates is that of the S.C. or Specific Capacity (Q/S) in litres/second per metre. The values for 100 minutes for the three stages of the step-drawdown test and for 720 minutes for the main test are 1.09, 1.0, 0.98 and 1.07 l/s/m respectively. Its use may be precluded by a high component of turbulent head loss i.e. CQ^2, since this cannot be allowed for in S.C. values. The value obtained for C from the above analysis suggests a very high component of turbulent head loss but for the range of pumping rates encountered in the tests a reduction of only 10% in the S.C. was noted from lowest to highest rates, an apparent contradiction. It is concluded that the other

head losses, for example due to partial penetration effects, and the aquifer showing leaky characteristics, does not allow the magnitude of C to be an indicator of the turbulent head losses. Hence it is felt justified to use a value of S.C. to extrapolate the early time graphs of Figure 5 to long term pumping. The value chosen is 1.0 litres/second per metre.

By using the formula of Turcan (1968) the expected Specific Capacity of the well, if it were open over the total depth of the producing aquifer, is given by:-

$$\frac{Q}{Sp} = \left[\frac{Q}{S} \cdot K_p \left(1 + 7\sqrt{\frac{r_w}{2K_p.m}} \cos \frac{K_p \pi}{2}\right)\right]$$

where $\frac{Q}{Sp}$ = Specific Capacity of partially penetrating well (1 l/s per metre)

$\frac{Q}{S}$ = Specific Capacity of fully penetrating well

K_p = Ratio, length of open section to saturated thickness of aquifer (0.23)

r_w = Radius of pumped well (0.25 ft. or 0.05 m)

m = Thickness of aquifer (8.59 ft. or 26.2 m)

Solving for $\frac{Q}{S}$ gives a value of 2.82 l/s per metre (or 11.35 gallons per minute/foot). Using this figure and the graph in Walton 1970 (p. 317) and assuming a storage coefficient for the aquifer of 0.001, an approximate value for the Transmissivity of the Upper Port Willunga Beds in this vicinity is 300 m^3/day/m.

CONCLUSIONS

1. An equation for early-time drawdown expected in the bore for periods up to about 100 minutes from start of pumping is given by

$$St = (300 + 300 \log_{10} t)\, Q + 3 \times 10^4\, Q^2$$

2. An approximate value for Transmissivity for the upper Port Willunga Beds in this vicinity is 300 m^3 per day/m.

RECOMMENDATIONS

1. The above equation has been used to construct graphs of anticipated early-time drawdown (Figure 5). These values will be somewhat larger than those experienced for long term pumping, and it should be noted that drawdown is measured from the pre-pumping level, not ground level. A specific capacity (Q/S) of 1.0 litre per second/metre has been used to expand these graphs for longer term pumping.

2. The pump setting may be estimated from Figure 5 but should not be lower than 40 m below ground level.

3. The maximum pumping rate suitable for this bore to prevent excessive head loss or collapse of the open hole section is 8.0 l/s.

4. A water sample should be collected each month during the period in which the bore is used. This sample should be submitted to this Department for a test of approximate total dissolved salts. At least one sample per annum should be forwarded to this Department for a full chemical analysis.

5. Water levels must be recorded on a routine basis to provide long term information on the efficiency of the bore and the characteristics of the aquifer. It is suggested that levels be recorded,

a) Prior to commencement of pumping

b) On completion of pumping with length of pumping recorded (and total volume extracted if available).

Measurements should be made relative to ground level and forwarded to this Department for analysis.

M.A. COBB
GEOLOGIST
HYDROGEOLOGY SECTION

MAC:FdeA
9/1/74

APPENDIX A

DEPARTMENT OF MINES — SOUTH AUSTRALIA

SHEET 1 OF 4

BORE LOG · HYDROGEOLOGY

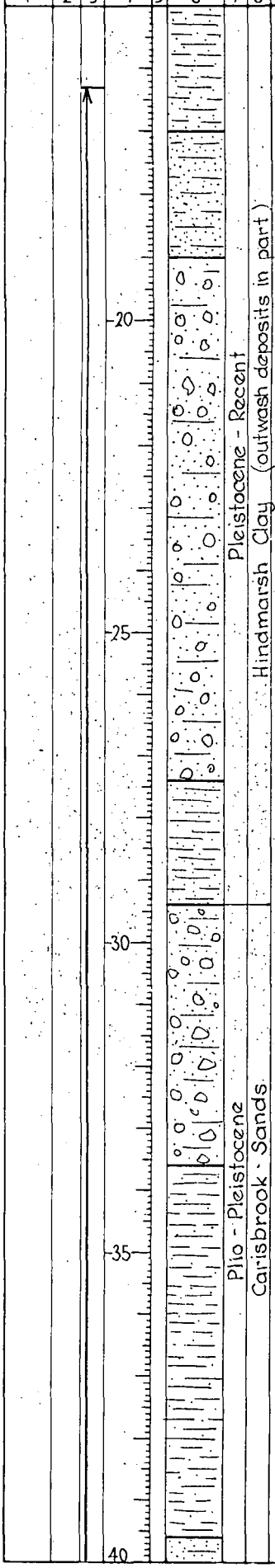
Purpose of Bore: WATER SUPPLY
State No.: 771202092
Hundred: ADELAIDE
Section: PT. 84
Bore Serial No.: 53/73
Owner: PUBLIC BLDGS. DEPT.
Address: ADELAIDE
Project No.:
Driller: A. STURAK
Docket No.: 1797/68
Commenced: 18.6.73
Completed: 30.6.73
R.L. Collar (M.S.L.):
Depth: 70 m
Drill type: CABLE TOOL
Circulation: WATER
R.L. Surface:
Co-ords E:
Logged by: M.A. COBB
Date: 24.7.73
Casing: 6 inch steel
A.M.G. Zone:
N:

WATERS CUT

DEPTH (m)	WATER LEVEL (m)	SUPPLY-	HOW TESTED	TOTAL SALTS mg/ℓ	ANALYSIS No.
17.00	7.20				
29.40	7.20				
43.00	16.30				

REMARKS: MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL

1 CASING	2 WATERS CUT	3 WATER LEVEL	4 DEPTH (m)	5 CORE	6 GRAPHIC LOG	7 AGE	8 UNIT	9 PENETRATION RATE	DESCRIPTION
						Pleistocene - Recent	Hindmarsh Clay (outwash deposits in part)		0-1 m SILTY LUTITE - (CLAY) Grey-brown, sticky odd sand size quartz grain. 1-3 m CLAYEY ARENITE/RUDITE Brown. Angular rounded sand/gravel size fragments of quartz, sandstone, metasiltstone etc. in a brown sticky clay. 3-17 m LUTITE Multicoloured (grey-red-brown). Variable amounts (to 10%) of sand size grains. Mostly quartz plus some calcareons. Between 11-13 m somewhat silicified with "intergranular" Mn staining. Odd very hard White silicified fragment. Becomes more sandy to base (15-17 m) with red sandstone fragments (rose and clear quartz to 0-5 mm) and odd large quartz to 5 mm, rounded to angular.



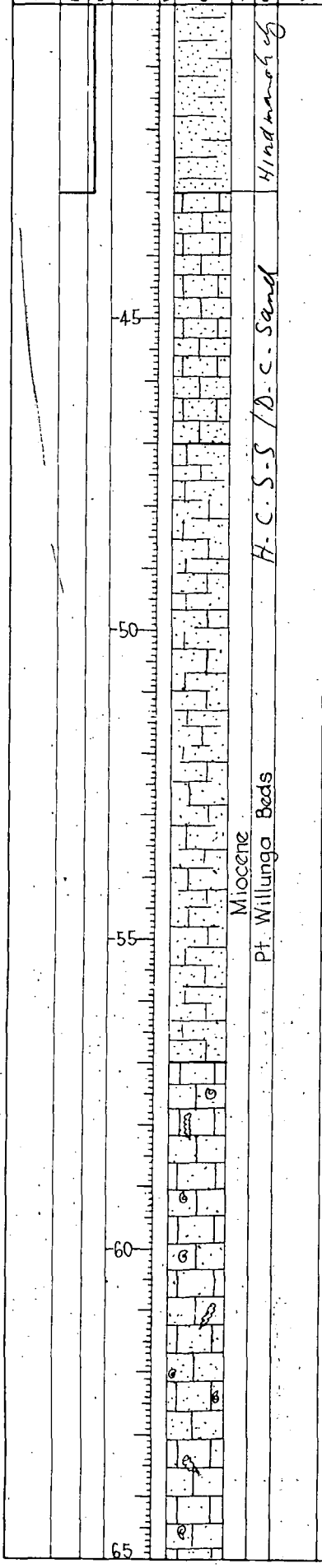
17-19 m SANDY LUTITE Brown. Increase in sand size component - well rounded to sub-angular quartz (clear-near black), sandstone fragments etc.

19-27.4 m CLAYEY ARENITE/RUDITE Variable mineral/rock fragments 0.3 mm-1 cm e.g. green metasiltstone, loosely to well cemented sandstone (commonly ferruginous), clear to near black rounded to angular quartz grains in a brown-grey clay matrix.

27.4-29.4 m SANDY LUTITE Brown. Less fragments than above but type still variable.

29.4-33.6 m CLAYEY ARENITE/RUDITE As for 19-27.4 m. Odd pale yellow quartz, ironstone fragment. Matrix grey-brown lutite. Less sandy towards base.

33.6-39.6 m LUTITE Grey-green, stiff. Odd sand size grain.



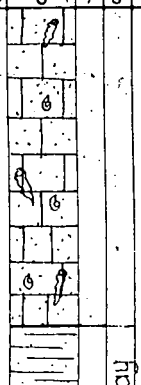
39.6–43 m CLAYEY ARENITE Sand size quartz (clear-milky) and rock fragments in a grey-green lutite matrix (30%).

43–47 m QUARTZOSE CALCARENITE Off white – brown. Quite indurated. Quartz grains 0.2–0.4 mm about 30%. Rest shells, shell fragments and spicules to 0–5 mm.

47–57 m CALCAREOUS SANDSTONE Buff-orange. As above except more quartz. Odd opaques. Becoming more calcareous (grey) towards base. Some large (5 mm) shell fragments.

57–69.2 m QUARTZOSE CALCARENITE Brown-grey Dominantly shell fragments, echinoid fragments spicules etc. with rounded-subangular quartz grains. Odd quartz to 1.5 mm. Between 61–63 m quartz 30–40% up to 0.5 mm. Echinoid fragments common. From 65–67. More even grained (noted foram. 1 mm).

State No. 771202092 Bore Serial No. 53/73 SHEET 4 OF 4



-70

Miocene

Munno Para Clay

69.2-70 m LUTITE Medium-dark grey. Odd calcareous grain.

70 m. END OF HOLE.

APPENDIX B

DEPTH OF BORE m	WATER CUT m	WATER LEVEL m	SALINITY mg/l	pH	ANALYSIS NO. W
17.00	-	7.20	6215	7.5	2743/73
25.00	22.00	7.20	2355	6.5	2744/73
32.00	29.40	7.20	6300	7.0	2745/73
45.00	44.00	16.40	1320	7.5	2774/73
54.00	53.00	16.30	1145	7.5	2775/73
57.00	53.00	16.30	1145	7.0	2776/73
59.00	58.00	16.30	1115	7.0	2777/73
64.00	63.00	16.30	1070	7.0	2778/73
70.00	69.00	16.30	1070	7.0	2779/73

DEVELOPING BORE

Total Depth of Bore = 70.00 m

DATE	TIME	SALINITY mg/l	pH	ANALYSIS NO. W
28.6.73	8.00 a.m.	985	8.0	2780/73
28.6.73	10.00 a.m.	1015	7.5	2781/73
28.6.73	11.30 a.m.	1015	7.0	2782/73
28.6.73	2.00 p.m.	1015	7.0	2783/73
28.6.73	4.30 p.m.	1015	7.0	2784/73
29.6.73	-	1015	7.5	2785/73
29.6.73	11.50 a.m.	1045	8.0	2799/73
29.6.73	"	1168 (Calc) (AMDEL)	7.9	2800/73

REDEVELOPMENT OF BORE AFTER BACKFILLING

Total Depth 49.00 m

DATE	SALINITY mg/l	pH	ANALYSIS NO. W
4.7.73	985	7.0	3047/73
5.7.73	1015	7.0	3048/73
5.7.73	985	7.0	3049/73

PUMP TESTING

DATE	PUMP TEST		SALINITY mg/l	pH	ANALYSIS NO. W
16.7.73	Stage I	Start	1045	7.5	3050/73
"	"	100 mins.	1045	7.0	3051/73
"	Stage II	Start	1015	7.0	3052/73
"	"	100 mins.	1070	7.0	3053/73
"	Stage III	Start	1070	7.5	3054/73
17.7.73	"	100 mins.	1070	7.0	3055/73
18.7.73	Main Test	Start	1070	7.0	3056/73
"	"	100 mins.	1070	7.0	3057/73
"	"	200 mins.	1070	7.0	3058/73
"	"	300 mins.	1070	7.0	3059/73
"	"	360 mins.	1070	7.0	2998/73
"	"	400 mins.	1045	7.0	3060/73
"	"	500 mins.	1070	7.0	3061/73
"	"	600 mins.	"	7.0	3062/73
"	"	700 mins.	"	7.0	3063/73
"	"	12 hours	"	7.0	3064/73
"	"	"	"	7.0	3065/73

(Final sealed to AMDEL)

WATER ANALYSIS REPORT AMDEL COMPUTER SE

SAMPLE NO. W2800/73 JOB NO. 124/73

CHEMICAL COMPOSITION

		MILLIGRAMS PER LITRE MG/L	MILLIEQUIVS. PER LITRE ME/L
CATIONS			
CALCIUM	(CA)	46.	2.3
MAGNESIUM	(MG)	44.	3.6
SODIUM	(NA)	340.	14.8
POTASSIUM	(K)	10.	.3
ANIONS			
BICARBONATE	(HCO3)	511.	8.4
SULPHATE	(SO4)	132.	2.8
CHLORIDE	(CL)	345.	9.7
NITRATE	(NO3)	<1	.0

TOTALS AND BALANCE

CATIONS (ME/L)	21.0	DIFF =	.1
ANIONS (ME/L)	20.9	SUM =	41.8

DIFF*100. / SUM = .3 %

DERIVED AND OTHER DATA

CONDUCTIVITY (E.C.)
MICRO-S/CM AT 25 DEG. C 2641.

	MILLIGRAMS PER LITRE MG/L
TOTAL DISSOLVED SOLIDS	
A. BASED ON E.C.	ppm
B. CALCULATED (HCO3=CO3)	1168.
C. RESIDUE ON EVAP. AT 180 DEG. C	
TOTAL HARDNESS AS CACO3	296.
CARBONATE HARDNESS AS CACO3	296.
NON-CARBONATE HARDNESS AS CACO3	<5
TOTAL ALKALINITY AS CACO3	419.
FREE CARBON DIOXIDE (CO2)	
SUSPENDED SOLIDS	
SILICA (SIO2)	
BORON (B)	

	UNITS
REACTION - PH	7.9 pH.
TURBIDITY (JACKSON)	
COLOUR (HAZEN)	
SODIUM TO TOTAL CATION RATIO (ME/L)	70.6 %

RBD.

NAME-MITCHELL PARK
ADDRESS-BOYS TECH. SCHOOL

DATE COLLECTED-29- 6-73
DATE RECEIVED-

HUNDRED-ADELAIDE
SECTION-84
HOLE NO-1 (Temp)
SUPPLY-
SAMPLE COLLECTED BY-A. STUBAK

WATER CUT-43.00M
WATER LEVEL-16.30M
DEPTH HOLE-70.00M

STATE No. 7712020 92

WATER ANALYSIS REPORT — AMDEL COMPUTER SERVICES

SAMPLE NO. W3065/73 — JOB NO. 454/74

CHEMICAL COMPOSITION

		MILLIGRAMS PER LITRE MG/L	MILLIEQUIVS. PER LITRE ME/L
CATIONS			
CALCIUM	(CA)	48.	2.4
MAGNESIUM	(MG)	46.	3.8
SODIUM	(NA)	331.	14.4
POTASSIUM	(K)	9.	.2
ANIONS			
BICARBONATE	(HCO3)	522.	8.6
SULPHATE	(SO4)	115.	2.4
CHLORIDE	(CL)	353.	10.0
NITRATE	(NO3)	<1	.0

TOTALS AND BALANCE

CATIONS (ME/L) 20.8 — DIFF = .1
ANIONS (ME/L) 20.9 — SUM = 41.7

DIFF*100. / SUM = .2 %

DERIVED AND OTHER DATA

CONDUCTIVITY (E.C.)
MICRO-S/CM AT 25 DEG. C 2060.

	MILLIGRAMS PER LITRE MG/L
TOTAL DISSOLVED SOLIDS	
A. BASED ON E.C.	
B. CALCULATED (HCO3=CO3)	1159.
C. RESIDUE ON EVAP. AT 180 DEG. C	
TOTAL HARDNESS AS CACO3	309.
CARBONATE HARDNESS AS CACO3	309.
NON-CARBONATE HARDNESS AS CACO3	<5
TOTAL ALKALINITY AS CACO3	428.
FREE CARBON DIOXIDE (CO2)	
SUSPENDED SOLIDS	
SILICA (SIO2)	
BORON (B)	

	UNITS
REACTION - PH	7.4
TURBIDITY (JACKSON)	
COLOUR (HAZEN)	
SODIUM TO TOTAL CATION RATIO (ME/L)	69.2 %

REMA

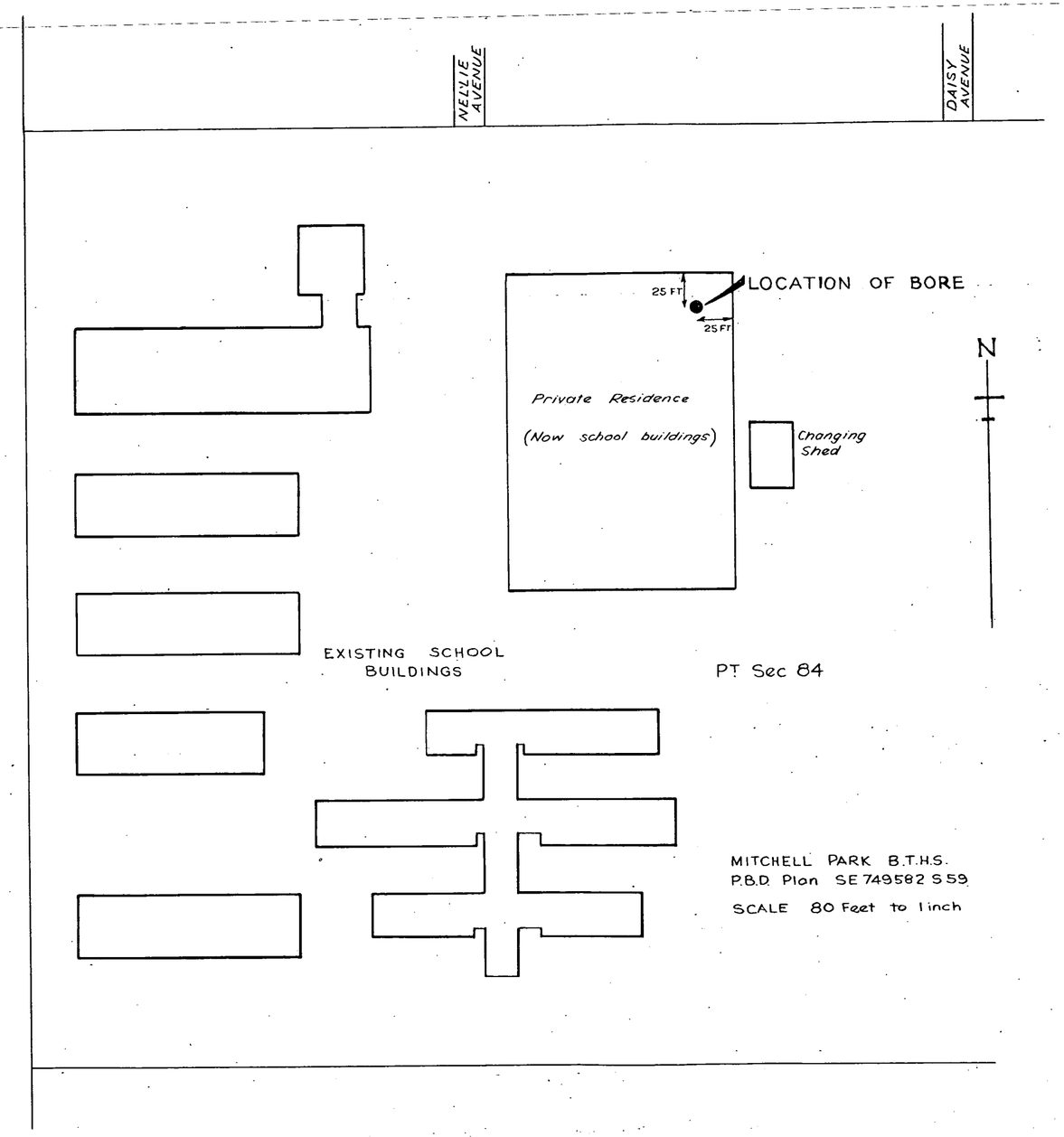
NAME- MITCHELL PARK SCHOOL
ADDRESS-

DATE COLLECTED-18/7/73
DATE RECEIVED-

HUNDRED-ADELAIDE
SECTION-84
HOLE NO-
SUPPLY-6000
SAMPLE COLLECTED BY-E WOJECK

STATE NO 77 to 2020/12

WATER CUT-
WATER LEVEL-
DEPTH HOLE-48 M



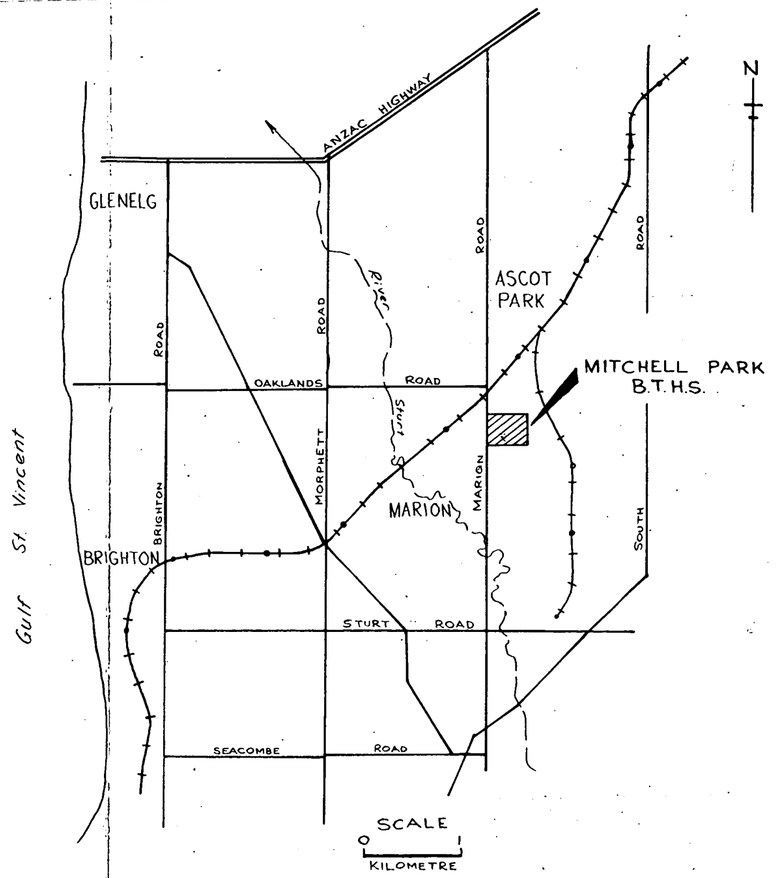


FIG. 1

	DEPARTMENT OF MINES – SOUTH AUSTRALIA	Scale: 80 FT. TO 1 INCH
Compiled: M. COBB	MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL	Date: 7 JAN 1974
Drn. A.F. | Ckd.	BORE Nº1	Drg. No. 74-26 Ha 6
	LOCALITY PLAN	

1M-2.70 A1811

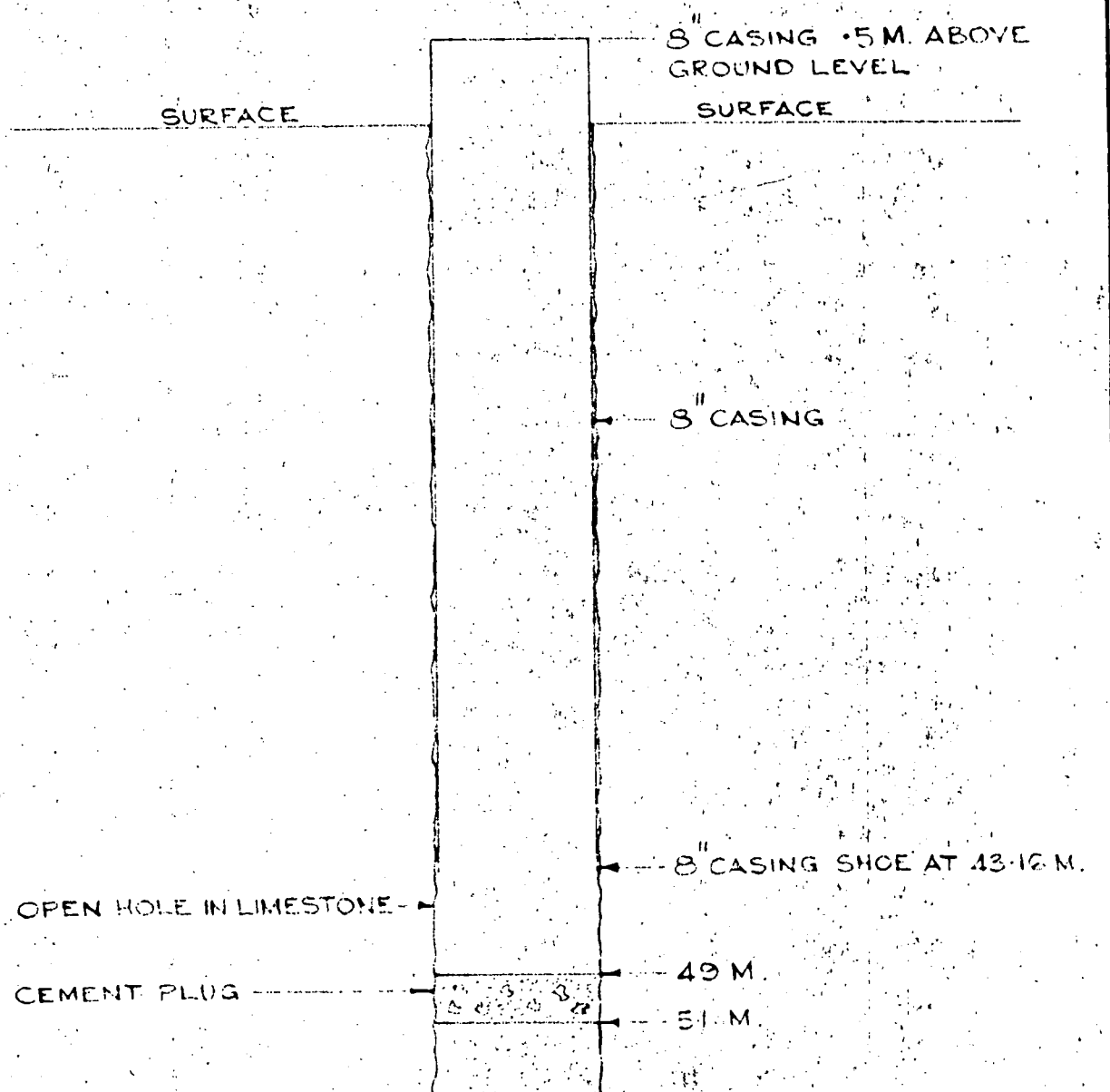
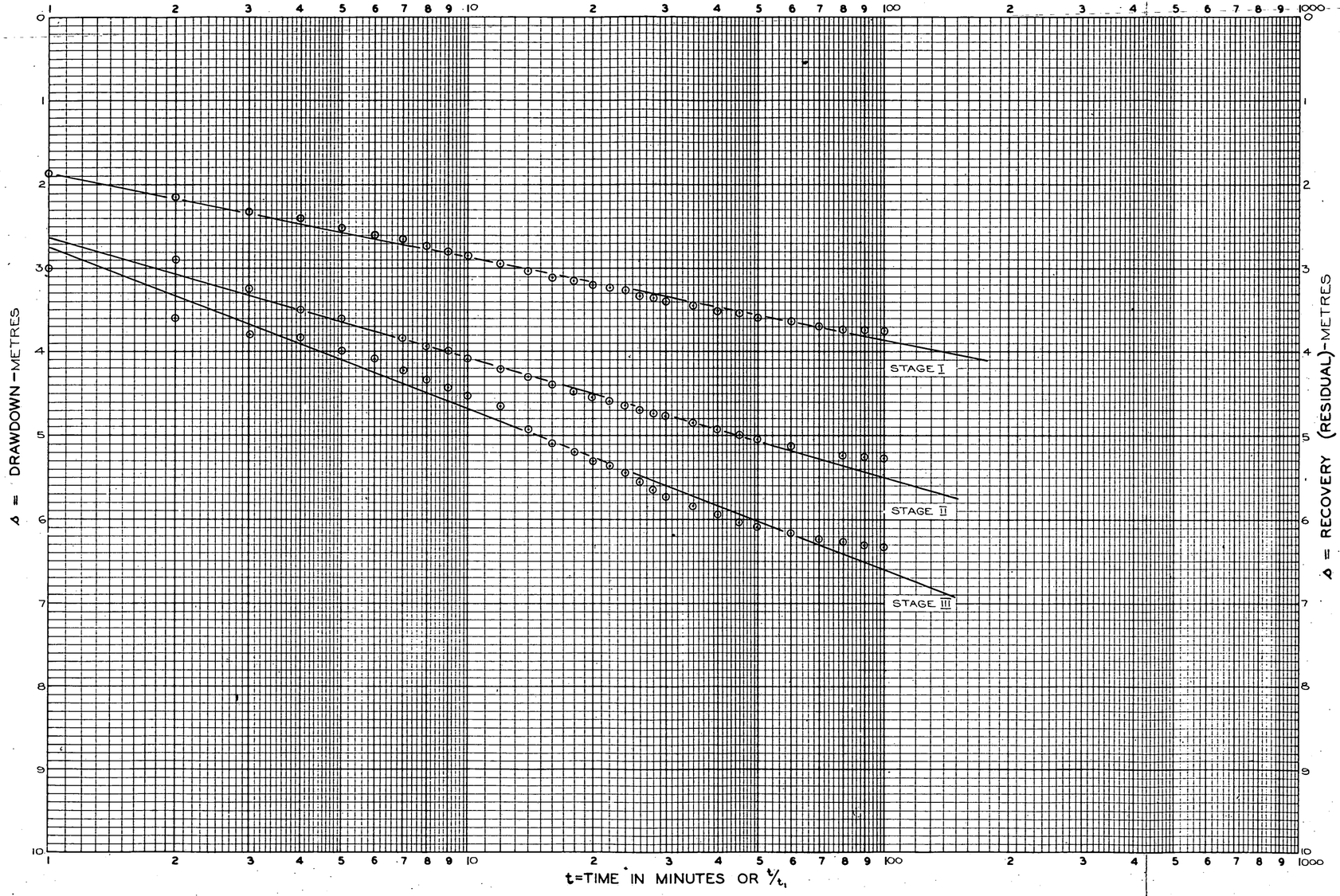


FIG. 2

	DEPARTMENT OF MINES – SOUTH AUSTRALIA	Scale: N.T.S.
Compiled:	BORE No 1. PUBLIC BUILDINGS DEPARTMENT	Date: 19-7-73
Drn. R.B. | Ckd.	MITCHELL PARK BOYS TECHNICAL HIGH	Drg. No.
	PT. SECTION 54 HUNDRED OF ADELAIDE	SK-721



BOREHOLE STATE Nº 7712020092
DEPTH TO WATER LEVEL
AT TEST START (L_2) 15·11 m
PUMP INTAKE DEPTH (L_1) 33 m
*AVAILABLE DRAWDOWN 17·89 m

TYPE OF PUMP POMONA
DISCHARGE STARTED AT 09·10 ON 16/7/73
" STOPPED AT ____ ON ____
HOLE DEPTH 49m

EQUATION

$$T = \frac{0{\cdot}183 \times Q}{\Delta_\delta}$$

In which
T = Transmissivity – $ft^3/sec/ft$.
Q = Pumping Rate – ft^3/sec.
Δ_δ = Drawdown per log cycle – ft.

1 day = $8{\cdot}64 \times 10^4$ secs.

DATA

	Q	Δ_δ
STAGE I	4·11 ℓ/s	1·10
STAGE II	5·28 ℓ/s	1·42
STAGE III	6·21 ℓ/s	1·95

CALCULATIONS

$T = \frac{0{\cdot}183 \times \quad\quad}{\quad\quad} =$ $ft^3/sec/ft =$ $ft^3/day/ft.$

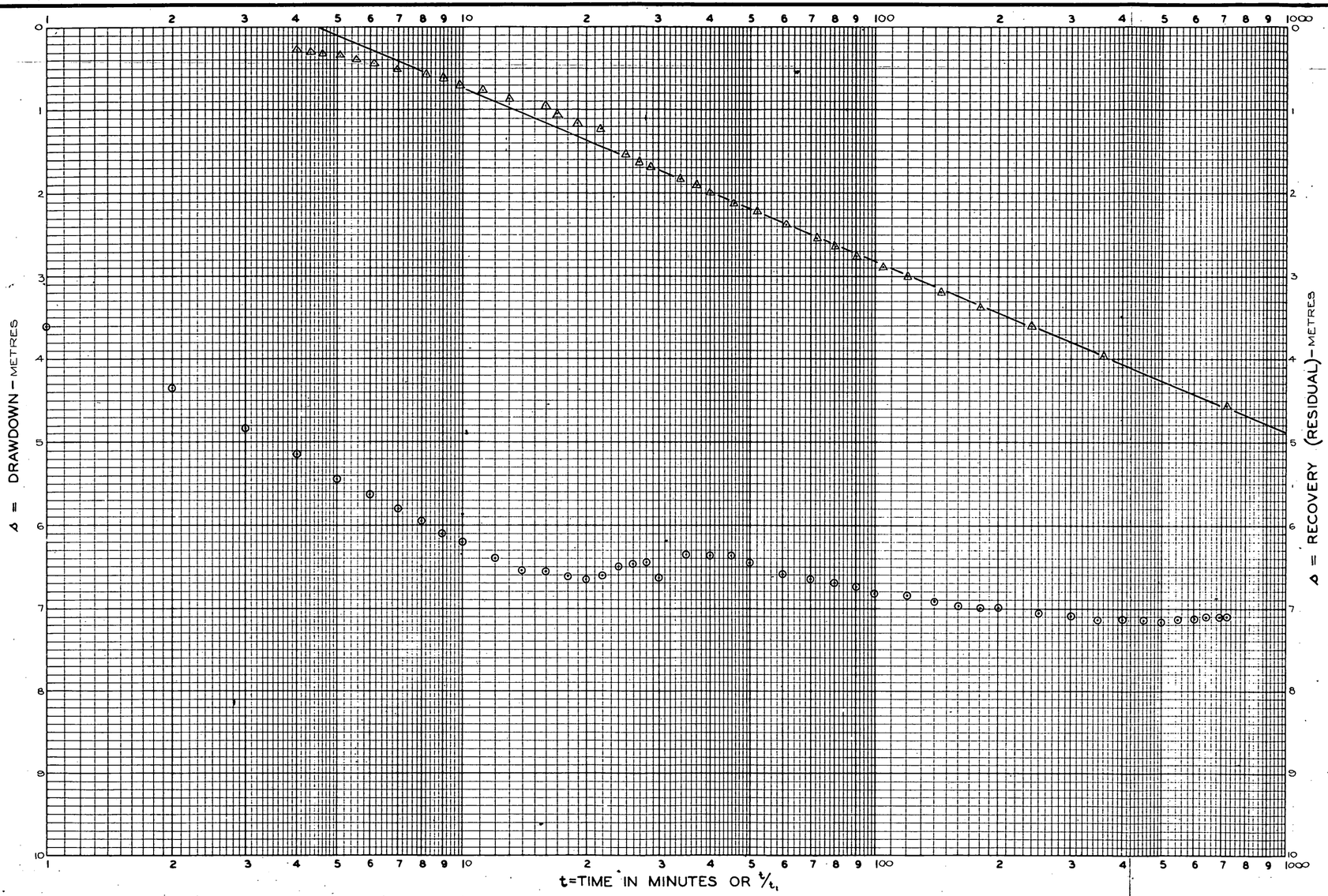
⊙ DRAWDOWN

* Available drawdown = $L_1 - (L_2 +$ _____ ft)

FIG.3

HYDROGEOLOGY SECTION	DEPARTMENT OF MINES—SOUTH AUSTRALIA	DM. 1797 /68
COMPILED: M.A. COBB	MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL	DATE: 7TH JAN. 1974
DRN. A.G.R. CHD. A.F.	PT. SECT. 84 HD. ADELAIDE STEP DRAWDOWN TESTS PUBLIC BUILDINGS DEPT.	DRG. No. 74-23 Hg6

P.F. No 69–252 MB



BOREHOLE STATE Nº 771202092 TYPE OF PUMP POMONA

DEPTH TO WATER LEVEL DISCHARGE STARTED AT 0800 ON 16/7/73

AT TEST START (L_2) 15.11 m " STOPPED AT 2000 ON 16/7/73

PUMP INTAKE DEPTH (L_1) 33 m HOLE DEPTH 49m

*AVAILABLE DRAWDOWN 17.89 m

EQUATION

$$T = \frac{0.183 \times Q}{\Delta_o}$$

In which
T= Transmissivity-ft.³/sec./ft.
Q= Pumping Rate-ft.³/sec.
Δ_o= Drawdown per log cycle.-ft.

1 day = 8.64×10^4 secs.

DATA

Q	Δ_o
7.59 l/s	2.09 (Recovery)

CALCULATIONS

$T = \frac{0.183 \times \quad}{\quad} =$ ft.³/sec/ft. = ft.³/day/ft.

⊙ DRAWDOWN

△ RECOVERY

* Available drawdown = $L_1 - (L_2 +$ ____ ft)

FIG.4

HYDROGEOLOGY SECTION	DEPARTMENT OF MINES—SOUTH AUSTRALIA	D.M. 1797 /68
COMPILED: M.A.COBB	MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL	DATE: 7TH JAN. 1974
DRN. A.G.R. CHD. A.F.	PT. SECT. 84 HD. ADELAIDE	DRG. No. 74-24 Ho6
	MAIN PUMP TEST	
	PUBLIC BUILDINGS DEPT.	

P.F. No. 69–952 MB

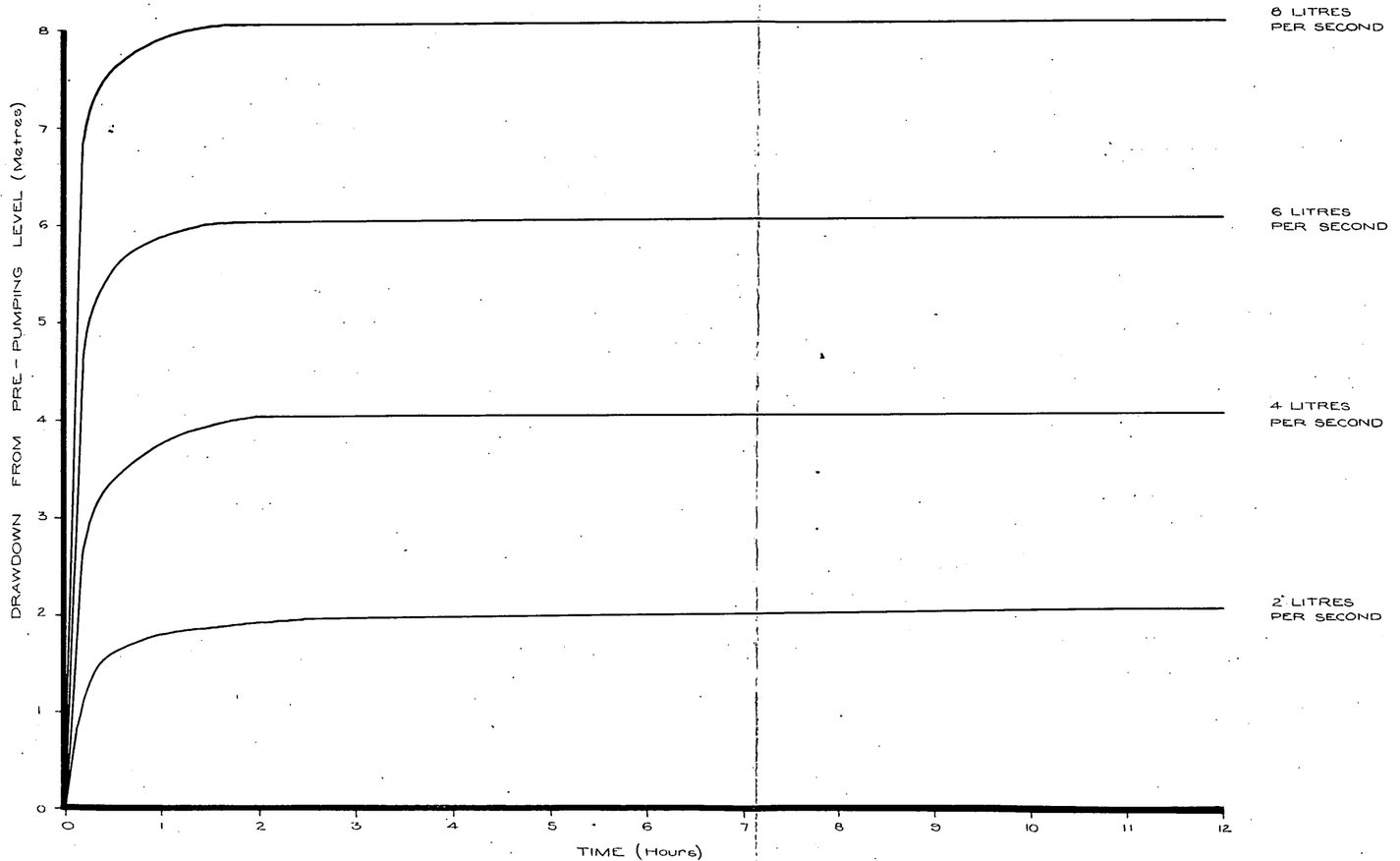


FIG.5

HYDROGEOLOGY SECTION	**DEPARTMENT OF MINES – SOUTH AUSTRALIA**	Scale: GRAPHICAL
Compiled: M.COBB	MITCHELL PARK BOYS TECHNICAL HIGH SCHOOL	Date: 4TH. DEC. 1974
Drn. A.R. Ckd. A.F.	BORE Nº1	Drg. No. 74-25 Ha6
	ANTICIPATED DRAWDOWN Vs. TIME	