

Rept.Bk.No. 69/63
G.S. No. 4317

Water Resources Branch
DATA FILE



DEPARTMENT OF MINES SOUTH AUSTRALIA

GEOLOGICAL SURVEY
ENGINEERING DIVISION

SOUTH EAST WATER RESOURCES
HYDROGEOLOGY PROGRESS REPORT NO. 4

TEST AREA 1

RESULTS OF GEOLOGICAL AND GEOPHYSICAL INVESTIGATION

JULY 1969

by

B.M. HARRIS
GEOLOGIST
HYDROGEOLOGY SECTION

D.M.1060/69

15th September, 1969

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WATER RESOURCES BRANCH

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DEPARTMENT OF MINES
SOUTH AUSTRALIA

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D.M. No. 1060/69

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B3	" " " "	P3 69-487/6
B4	" " " "	P5 69-482/6
B5	" " " "	P6 69-477/6
B6	" " " "	P7 69-468
B7	" " " "	P8 69-478/6
B8	" " " "	R2 69-481/6
B9	" " " "	R3 69-480/6
B10	" " " "	R5 69-479/6
B11	" " " "	R7 69-484/6
B12	" " " "	R8 69-476/6
B13	" " " "	R9 69-486/6

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SOUTH EAST WATER RESOURCES

HYDROGEOLOGICAL PROGRESS REPORT NO. 4

TEST AREA 1

RESULTS OF GEOLOGICAL AND GEOPHYSICAL INVESTIGATION

JULY 1969

SUMMARY AND CONCLUSIONS

Investigations have been carried out in the first test area of the South East Water Resources Investigation. Drilling by Rotary and Cable Tool methods up to 555 feet deep has shown a near horizontal sequence of bedded limestones. The cable tool method has been found to be the most satisfactory way for sampling both the geological sequence and the groundwater, and for constructing holes for pump testing. It is recommended that this method only be used in future investigations.

Three main geohydraulic units have been recognised; Unit A (aquifer), Unit B (aquifer), and Unit C (confining bed). The two aquifers may be hydraulically continuous over part of the area. The lithology suggests that Unit A has higher values for transmissivity and storage coefficient.

The general direction of groundwater flow is to the west.

Recharge to Unit A is local and therefore water quality depends on the geomorphologic environment; i.e. in swampy areas the salinity values are high and in the dune ranges the groundwater has a low salinity. Water quality in Unit B may be influenced by local recharge from Unit A. Recharge appears to be almost direct where there is no confining bed or indirect by lateral and vertical flow where a confining bed occurs.

In the coastal zone drilling and geophysical work has shown a complex geological and hydraulic situation where groundwater is evaporated in Lake St. Clair which is a sink for groundwater. A saltwater-freshwater interface was found on the eastern side of the lake which could be attributed to lack of flushing of the original seawater. A similar interface could have formed as a result of evaporation of groundwater from the lake.

Further ground resistivity work should be carried out on the western side of Lake St. Clair during the North Coastal Survey (Stapledon and Bleys, 1969).

Measurements of water levels and collection of water samples for salinity determinations should continue until at least the end of 1973. From September 1969 the E. & W.S. Department Office at Robe will be responsible for this phase of the investigation.

INTRODUCTION

A programme of investigation has been conducted in Test Area 1 as part of the South East Water Resources Investigation. This area is between Robe and Beachport (Fig. 1).

The objectives of this Test Area (Morton 1969 (a) and Stapledon, D.H. and Bleys, C., 1969) were:-

- (a) To provide a model of an area suspected to be a major flow path.
- (b) To check the relationships between the groundwater, the coastal lakes and the seawater - groundwater interface.

Investigations have included the following:

- (a) Drilling - 8 cable tool holes totalling 2075 ft., and ranging in depth from 120 to 555 ft. Their objectives included
 - (i) detailed sampling of the stratigraphic sequence and groundwaters,

- (ii) providing observation holes for long term monitoring of water levels and salinities
- (iii) providing holes for pumping tests
- (iv) locating and sampling the salt-fresh water interface near the coast.

- 9 rotary holes totalling 2675 feet ranging in depth from 230 to 330 feet, drilled
- 32 auger holes totalling 735 feet and ranging in depth from 20 to 115 feet, for observation of shallow groundwaters.

A summary of the drilling programme, together with the geological logs is given in Appendix A.

- (b) Water Analysis - Water samples taken during drilling were tested either by conductivity method for assumed total salts (A.T.S.) or chemically analysed.
- (c) Levelling - All boreholes were levelled to Mean Sea Level Port Adelaide = 0.
- (d) Geophysical Logging - Cable tool and rotary bores have been geophysically logged by a Failing Logmaster unit. These logs are included in Appendix B.
- (e) Resistivity Survey - A resistivity survey was carried out in the coastal zone to help delineate the salt-fresh water interface.
- (f) Pump Testing - Three single stages of tests of 24 hours duration were carried out at Holes P1, P2 and P3, to determine the aquifer characteristics.

This report summarises the drilling and geophysical programme and briefly discusses the hydrogeology. A report on the pump test results is in preparation.

PHYSIOGRAPHY

The area is essentially a plain sloping at about 0.6 feet per mile towards the coast (Fig. 2). Superimposed on the plain are a series of dune ranges composed of aeolianite (Sprigg 1952). These are elongated parallel to the present coast and rise from 5 to 150 feet above the surrounding plain.

Because the ranges form a barrier to seaward surface drainage the interdunal regions contain large areas of swamps, or near the coast a series of salt lakes.

GEOLOGY

A summary of the regional geology is given in Progress Report No. 1 (Morton, 1969(b)).

The surface distribution of rock types is shown in Figure 2 (based on Sprigg 1952) and the subsurface geology is outlined in Table II and illustrated on Section A-B (Fig. 3).

Drilling has shown a near-horizontal sequence of bedded, calcareous rocks composed almost entirely of fossil remains. The rocks have been divided into four lithologic units. The divisions are tentative at this stage, until further work shows their continuity or otherwise within the region.

Although most of the rock types encountered are normally known as limestones, they have a wide range of grain sizes and textures which affect their hydraulic properties, e.g. porosity and permeability. Therefore they have been subdivided on the basis of grain size and composition according to the classification in Table I (Kicinski 1964).

TABLE I
CLASSIFICATION OF CARBONATES
PERCENT CARBONATE

		0	15	35	50	65	85	100
Grain Size in mm	.004	CLAY or MUDSTONE	CLAYEY MARL	MARL			LIMY MARL	CALCILUTITE
	.062	SILTSTONE	CALCAREOUS SILTSTONE			SILTY CALCISILTITE		CALCISILTITE
		SANDSTONE	CALCAREOUS SANDSTONE			ARENACEOUS (OR SANDY) CALCARENITE		CALCARENITE
	2.0	CONGLOMERATE or BRECCIA	CALCAREOUS CONGLOMERATE or CALCAREOUS BRECCIA			ARENACEOUS (OR SANDY) CALCIRUDITE		CALCIRUDITE

The gamma logs (from Appendix B) have been included on Section A-B to aid correlation. It should be noted that the number of counts per second is very small suggesting that there are very few clay minerals present. However, the characteristic patterns shown by the logs provide useful markers of relative geological time within this region.

HYDRAULICS

Three main geohydraulic units have been recognised (Table III). They are an upper aquifer (Geohydraulic Unit A), the Gambier Limestone Aquifer (Geohydraulic Unit B), and a confining bed (Geohydraulic Unit C).

Although the two aquifers appear to be hydraulically continuous over most of the area, they are usually separated by strata of low permeability and have their different aquifer characteristics (Table III).

Groundwater Movements

Over most of the area it appears that the two aquifers have approximately the same potential head (Figs. 4 and 5). One exception occurs in the vicinity of Holes P3 and A.11, where the hydraulic head of Aquifer A is 3.2 ft. lower than that of Aquifer B. Generally the potentiometric surface follows the topographic surface. Thus the general direction of flow is to the west.

Probably a local intertidal effect - that there is an aquifer m.p. - we are looking at with drilling we charge -

doubtful.

Recharge and salinity

Unit A aquifer

Recharge to this aquifer is local and therefore water quality depends on the geomorphologic environment (Fig. 6). This aquifer underlies interdune swamps and a flat area with dune ranges.

TABLE II

FORMATION	AGE	OBSERVED THICKNESSES	LITHOLOGY
Bridgewater	Pleistocene	45 to 150 feet	Mainly calcarenites, composed of shell fragments with usually less than 20% quartz sand, thin beds of clay and silt and calcareous conglomerates and calcisiltites; poorly consolidated. This formation includes the aeolianites of the dune ranges and the beach deposits which blanket the area.
Gambier Limestone	Lower Miocene to Upper Eocene	Greater than 555 feet	Calcarenites, calcirudites, calcilutites and calcisiltites, composed of fossil fragments, mainly bryozoa, usually less than 5% quartz sand. Nodules of flint have formed as a secondary feature. The formation has been divided into 4 lithologic units as follows: UNIT I : Mainly calcarenites with calcilutites, off-white to grey, with flint, shelly fragments in upper part, becomes glauconitic towards the base. UNIT II : Calcarenites with little calcilutites, white, no flint, glauconitic. UNIT III : Calcarenites and calcilutites, off-white to grey, with flint. Calcilutites become dominant towards the base. UNIT IV : Calcilutites, grey.

(a) Interdune swamp areas:-

Here the aquifer is overlain by clay soils of low permeability which restrict the downward movement of surface waters to it. As some evaporation of the water occurs before reaching the aquifer, the salinities are generally high (2852 to 6000 p.p.m.) and in some cases can be very high e.g. at Hole A28 (10,150 p.p.m.).

(b) Flat areas with dune ranges:-

These are covered by thin soils, often sandy with a high vertical permeability and are remnants of older dunes which were eroded prior to formation of the existing dunes. Surface water can penetrate easily to the aquifer resulting in the development of solution cavities and channels e.g. the Dairy Ranges in the vicinity of Holes R.7, P.2 and R.8, where high yields of good quality water are obtained from shallow depths with little or no depletion of groundwater stored. Groundwater quality in these areas is good because there is little chance for evaporation before infiltration to the aquifer.

Unit B aquifer

In some drillholes, e.g. P2 this aquifer is immediately below Aquifer A without any confining bed. Other boreholes show low to very low permeability confining beds at the top of the aquifer e.g. P1 and P3. This situation could exist in other parts of the area but only the cable-tool samples were reliable enough for determining where aquifers or confining beds occurred (Appendix A).

Good quality water with salinities less than 1,200 p.p.m. was found in most boreholes (Fig. 7). In Hole R.5 water containing 955 p.p.m. was encountered at 20 ft. but below 270 ft. the salinity was 3,455 p.p.m.

*more likely that
A28 is in a discharge
area - hence high
salinity.*

doubtful

TABLE III
Classification of Geohydraulic Units

GEOHYDRAULIC UNIT	GEOLOGICAL EQUIVALENT	HYDRAULIC PROPERTIES
A	Includes the Bridgewater Formation	Mainly good aquifer with minor partially to completely confining beds. $T = 2.5 \times 10^{-1}$ to 3.38×10^{-1} cusecs/ft. $S = 0.09$ to 0.18
B	Includes Lithologic Units I, II and most of III of the Gambier Limestone.	Effectively a good aquifer - thinner beds of partially to completely confining material occur. Lithologic Unit II is probably the best aquifer material. $T = 3.18 \times 10^{-2}$ to 2.24×10^{-1} cusecs/ft. No useful figures obtained for storage coeff.
C	Includes Lithologic Unit IV and some of Unit III of the Gambier Limestone.	Confining bed - some thin aquifers occur at the top of the unit.

Generally water quality appears to be influenced by local recharge from Unit A. Unit B probably is recharged through Aquifer A in those areas where there is no local confining bed, or recharged indirectly by a combination of lateral and vertical flow where a confining bed occurs.

The saline water found about 270 feet in Borehole R.5 probably due to the occurrence of a low permeability zone.

Saltwater - Fresh water Interface

The coastal area was explored by 5 deep boreholes, and 3 ground resistivity depth probes (Fig. 8).

Salinity

Table IV summarises the groundwater levels and salinities and includes the approximate salinity of seawater for comparison. Analyses from all boreholes are given in Appendix C.

In three of the deep boreholes very saline water was intersected (P.6, P.7 and P.8). Brackish water was met in R.9, and water of low salinity was encountered in P.3 which penetrated almost the full section of Gambier Limestone.

The auger holes adjacent to Lake St. Clair show that the shallow groundwater is very saline near the lake and becomes progressively fresher with increasing distance from the lake.

Groundwater Levels

Generally the groundwater level of the aquifer Units A and B are the same. However, in the boreholes P.3 and A.11 the water level of Unit A aquifer is 3.2ft. below that of Unit B aquifer.

TABLE IV

Hole No.	Depth (ft.)	Salinity (p.p.m.)	Depth(s) where sample(s) taken (ft.)	Groundwater Levels	Date
P6	120	33432 to 41334	75 to 120	7.3	21 June, 1969
P7	140	5611 to 72200	20 to 140	-1.36	21 June, 1969
P8	120	5145 to 25013	10 to 120	-7.76	21 June, 1969
R9	300 X	about 35,000	220 to 330	-5.55	" "
A1	20	15000+	20	1.57	" "
A2	20	1320	20	-7.0	" "
A3	20	700	20	-3.7	" "
A4	20	1045	20	-1.6	" "
A11	20	555	20	1.3	" "
A12	20	3455	20	-	" "
A13	20	15000+	20	-	" "
A14	20	2545	20	-	" "
A15	20	15000+	20	-7.4	" "
A16	20	5285	20	-6.8	" "
A17	20	715	20	-3.3	" "
A18	20	745	20	0.5	" "
Lake St. Clair	-	-	-	-8.4	21 May, 1969
Sea Water	-	approx. 35,500	-	0.7 P.A.*	-

* P.A. = Port Adelaide

Groundwater levels show movement from the Robe and Woakwine Ranges towards lake St. Clair. The level of the lake appears to be continuous with the groundwater table. Most of the levels including the lake level are below mean sea level (MSL) Port Adelaide. The sea level at Robe is approximately 0.7 ft. above MSL Pt. Adelaide.

Three ground resistivity traverses were carried out in the area by D. McPharlin of the Geophysics Section after the drilling programme had been completed. The locations and results are shown in Fig. 8. The results suggest an interface dipping from 14° to 40° in an easterly direction. Zones of mixed water are indicated. In Sections B-B' and C-C' the interface appears to steepen with increasing thickness of the fresh water head and suggest little vertical hydraulic continuity.

Nature of the interface

There are three important factors involved -

- (a) The water level of Lake St. Clair and the groundwater levels near the lake are below mean sea level.
- (b) Lake St. Clair appears to act as a "sink" for shallow groundwater which moves to the lake where it is evaporated.
- (c) The Unit A aquifer hydraulic head is less than the head for the deeper parts of Unit B aquifer. This may be due to the depletion of shallow groundwater through evaporation at the lake, and implies no hydraulic connection between Aquifer Unit A and B.

These factors suggest that a zone of saline water has formed below Lake St. Clair and adjacent areas also as a result of evaporation.

Section D-D' of Fig. 8 represents diagrammatically the saline water zone below Lake St. Clair which is continuous with the inflowing seawater to create an interface along the eastern side of the lake.

MONITORING

Regular observations of the boreholes will be made until at least the end of 1973. Water levels will be measured monthly and water samples collected at least twice a year (during March and September) as outlined in Table V and analysed for total solids by evaporation.

In the deep holes two samples are to be taken - one at the bottom of the casing shoe and another at the bottom of the hole. One water sample should be sufficient for shallow holes.

From September 1969 the responsibility for measuring and sampling the bores will pass from this Department to the E. & W.S. Department who have a resident officer at Robe.

A flow chart together with a water level proforma sheet are given in Appendix D. The flow chart shows the suggested arrangements for making the observations, and for the transmittal, storage and plotting of the data. The project geologist in Adelaide will be responsible for the handling and analysis of this phase of the programme.

RECOMMENDATIONS

Work carried out to date has indicated that further work in the area should be carried out to complete the hydro-geological survey and should include:-

- completion of the privately owned boreholes.
- collecting of water samples of all lakes at different depths to investigate the occurrence of fresh waters and their possible interface.

- Levelling of all lake water surfaces.
- Carrying out a continuous salinity probing on borehole R9 to investigate further the occurrence of the reported zone of mixing.
- Installing a continuous water level recorder.
- Installation of a water recorder near the coast to monitor the tidal fluctuations.
- Twice yearly preparation of a salinity map and iso potential map.

BMH:JKD
15.9.1969

n.f. Freeman
Per B.M. HARRIS
GEOLOGIST
HYDROGEOLOGY SECTION

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- MORTON, W.H., 1969(a) Water Resources of the South East of South Australia. A Summary Program for Ground-water Investigation. Geological Survey of South Australia. Rept.Bk.No. 68/105.
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APPENDIX A

SUMMARY OF DRILLING PROGRAMME
AND GEOLOGICAL LOGS OF BOREHOLES

SUMMARY OF DRILLING PROGRAMME

Cable Tool Drilling

Sludge samples were taken at 5 ft. intervals, washed, and bagged on site. Water samples were obtained by bailing at the time of drilling. Regular measurements of standing water levels were made during the drilling period to detect any differences in level with depth.

Rotary Holes

Cuttings were continuously removed from the hole during drilling by air lift. Samples were collected at 10 ft. intervals, washed and bagged on site. Water samples were obtained from the water discharging at the surface during drilling.

Skeletonised samples of all boreholes are kept at the Mines Department Case laboratories, Thebarton.

BORE LOG PERCUSSION · ROTARY DRILLING

BORE No R.1
SHEET 1 OF 4

PURPOSE OF BORE. OBSERVATION.

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED. SMITH

DRILLER. FEEBY.

COMMENCED 25.3.1969 COMPLETED 27.3.1969

LOGGED BY B.M. HARRIS DATE ON SITE

BORE SERIAL No. 1062/69 PERMIT NO. 631002101

FEATURE TEST AREA No 1

SECTION Adj. 21

DOCKET No. 231/1969

R.L. COLLAR (M.S.L.) 42.87

R.L. SURFACE 41.17

CO-ORDS: E

N

DEPTH 318ft.

CASING As shown

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No Air blown samples. See also Electrical Logs, Salinity logs, potential logs.			
20ft. of 6" casing					PLEISTOCENE		CLAY, calcareous, brown		FORMATION	AQUIFER
								CALCARENITE, shelly, yellow brown to offwhite		
60ft. of 3" casing							A few fragments of flint appearing			
							CALCARENITE, as above, with fragments of cream and grey Calcarenite, and green grey to brown calcilutite. Flint appearing 35ft.		UNIT A	
							Bryozoa appearing		BRIDGEWATER	
							Large shells			
							CALCARENITE, grey, bryozoal, siliceous in part, with black flint Very hard flint bar		GAMBIER LIMESTONE	UNIT 1
							Flints now grey and black			AQUIFER
					TERTIARY		Lumps of offwhite calcarenite appearing		UNIT B	
							Much more water inflowing			

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R.1
SHEET. 2 OF 4.

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED SMITH
DRILLER FEEBY

COMMENCED 25.3.1969 COMPLETED 27.3.1969

LOGGED BY B.M. HARRIS DATE ON SITE

BORE SERIAL No. 1062/69 PRMN.NQ.6310021.01

FEATURE TEST ARFA No 1

SECTION Adj. 21

DOCKET No. 231/69

R.L. COLLAR (M.S.L) 42.87

R.L. SURFACE 41.17

CO-ORDS: E

N

DEPTH 318ft.

CASING As shown

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS		
								REMARKS SEE DRAWING No 1 Air blown samples. See also Electrical Logs, Salinity logs, potential logs.		
				110				CALCARENITE, offwhite, bryozoal	UNIT 1	
								Becoming grey, abundant flint		
				120				CALCARENITE, very pale brown to offwhite, bryozoal, abundant flint.	LIMESTONE	
				130				A few lumps of green-grey calcilutite from 130 to 140ft.	AQUIFER	
				140				Becoming grey, abundant flint	UNIT B	
				150				Some very pale brown calcarenite from 150 - 155ft.	GAMBIER	
				160					GEOHYDRAULIC	
				170						
				180				CALCARENITE, offwhite, bryozoal, with flint	UNIT 2	
								No flint from 180ft.		
				190						
				200						

TERTIARY

FOOT 1000

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R, 1
SHEET. 3 OF 4

PURPOSE OF BORE. OBSERVATION.

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED SMITH

DRILLER FEEBY

COMMENCED 25.3.1969 COMPLETED 27.3.1969

LOGGED BY B.M. HARRIS DATE ON SITE

BORE SERIAL No. 1062/69 PERMN. NO. 631002101

FEATURE TEST A No 1

SECTION Adj. 21

DOCKET No. 231/69

R.L. COLLAR (M.S.L.) 42.87

R.L. SURFACE 41.17

CO-ORDS: E

N

DEPTH 318ft.

CASING As shown

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No 1 Air blown samples. See also Electrical Logs, Salinity logs, potential logs.		
				210						
				220						
				230						
				240						
				250						
				260						
				270						
				280						
				290						
				300						

BORE LOG PERCUSSION - ROTARY DRILLING

BORE No R.1

SHEET 4 OF 4

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED SMITH

DRILLER FEEBY

COMMENCED 25.3.1969 COMPLETED 27.3.1969

LOGGED BY B.M. HARRIS DATE ON SITE

BORE SERIAL No. 1062/69 PERMN. NO. 631002101

FEATURE TEST AREA No 1

SECTION Adj. 21

DOCKET No. 231/69

R.L. COLLAR (M.S.L.) 42.87

R.L. SURFACE 41.17

CO-ORDS: E

N

DEPTH 318ft.

CASING As shown

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS		
				310			TERTIARY	REMARKS SEE DRAWING No Air blown samples. See also Electrical Logs, Salinity logs, potential logs. CALCARENITE: offwhite, bryozoal	GAMBIER LIMESTONE 2	UNIT B, AQUIFER
				320						
				330						
				340						
				350						
				360						
				370						
				380						
				390						
				400						

CASING AS shown

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED			LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
		48	5.5						
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N° GAMBIER PLAINS TEST AREA Air Blown Samples. See also Electric Logs, Salinity Logs, Potential Logs.	
20' of 6" Casing			5.5			PLEISTOCENE		CLAY, very silty, black, Nutty to granular CALCRETE, hard sheetlike. CALCARENITE, pale yellow brown, shelly.. Shell bed 4 to 8 ft. Becoming silty 10-20 ft. Hole making water slowly - water pouring in from the shell bed (6-8ft.)	BRIDGEWATER FMN. Unit A. Aquifer
30ft of 3" Casing			48'			TERTIARY		CALCILUTITE grading to CALCISILTITE, Pale grey to off white, finely sandy. Probably a confining bed.	Unit 1 Aquifer
								CALCARENITE, very pale grey, bryozoal, shelly, a few flint fragments.	GAMBIER LIMESTONE Unit B
								Abundant flint fragments.	
								Some hard flint bars.	

BORE LOG PERCUSSION - ROTARY DRILLING

BORE No R2
SHEET. 2. OF. 3

PURPOSE OF BORE OBSERVATION
PROJECT SOUTH EAST WATER RESOURCES
HUNDRED SMITH
DRILLER FEEBY
COMMENCED 28/3/1969 COMPLETED 28/3/1969
LOGGED BY B.M.HARRIS DATE On site
BORE SERIAL No. 1063/69 Per.No.631005101
FEATURE TEST AREA No1
SECTION AJD. 51W
DOCKET No. 231/69
R.L. COLLAR (M.S.L) 35.25
R.L. SURFACE 33.05
CO-ORDS: E
N
DEPTH 230ft.
CASINGS shown

WATER CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°			
			110	 TERTIARY			<u>CALCARENITE</u> , very pale grey, bryozoal, with lumps of calcilutite.			
			120							
			130							
			140				<u>CALCARENITE</u> , offwhite, bryozoal, with flint fragments, appears clean.			
			150				----- Less flint from 140ft.			
			160				Increased quantities of water appearing.			
			170				----- Flint more abundant from 160ft.			
			180				Becoming grey from 165ft.			
			190				----- Hard flint bands from 175ft.			
			200							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R2
SHEET 3 OF 3

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1063/69. Per No. 631005101

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED SMITH

SECTION AJD. 51W

CO-ORDS: E

DRILLER FEEBY

DOCKET No. 231/69

N

COMMENCED 28/3/1969 COMPLETED 28/3/1969

R.L. COLLAR (M.S.L) 35.25

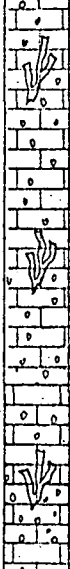
DEPTH 230ft.

LOGGED BY B.M.HARRIS DATE On site

R.L. SURFACE 33.05

CASING As shown

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			210	 TERTIARY			CALCARENITE, grey, bryozoal, with abundant flint.		
			220						
			230				END OF HOLE 230 FT.		
			240						
			250						
			260						
			270						
			280						
			290						
			300						

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R3
SHEET 1 OF 3

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1064/69 Perm.No. 631001101

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No1

HUNDRED SMITH

SECTION 11

DRILLER FEEBY

DOCKET No. 231/69

CO-ORDS: E

COMMENCED 29/3/1969 COMPLETED 30/3/1969

R.L. COLLAR (M.S.L.) 45.13

DEPTH 268ft.

LOGGED BY B.M. HARRIS DATE On site

R.L. SURFACE 43.20

CASING As shown

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No GAMBIER PLAINS TEST AREA 1. Air blown samples. See also Electrical Logs, Salinity & Potential logs				
20ft. of brn. casing	6'	4.5'	10		PLEISTOCENE		CLAY, silty, black, polygonal structure, surface cracks open to 2 cms.			BRIDGEWATER FORMATION	Unit A, Aquifer
							CALCRETE, hard, sheetlike.				
25ft. of brn. casing	26'		20		PLEISTOCENE		CALCARENITE, pale grey, shelly, somewhat calcreted.			BRIDGEWATER FORMATION	Unit A, Aquifer
							CALCARENITE, coarse shelly, sandy, pale yellow brown. Appears good aquifer.				
			30		PLEISTOCENE		CALCARENITE, pale yellow brown, silty, shelly, probably partly confining.			BRIDGEWATER FORMATION	Unit A, Aquifer
							CALCISILTITE, pale yellow brown, probably partially to completely confining.				
			40		PLEISTOCENE		CALCARENITE, silty, yellow brown, shelly, appears poor aquifer.			BRIDGEWATER FORMATION	Unit A, Aquifer
							CALCARENITE, pale yellow brown, sandy, shelly, hard bar at 34ft., appears good aquifer.				
			50		PLEISTOCENE					BRIDGEWATER FORMATION	Unit A, Aquifer
			60		PLEISTOCENE					BRIDGEWATER FORMATION	Unit A, Aquifer
			70		PLEISTOCENE					BRIDGEWATER FORMATION	Unit A, Aquifer
			80		TERTIARY		Hard flint bars from 74ft.			GAMBIER LIMESTONE, Unit	Unit B Aquifer
			90		TERTIARY		CALCARENITE, bryozoal, offwhite, appears clean.			GAMBIER LIMESTONE, Unit	Unit B Aquifer
			100		TERTIARY					GAMBIER LIMESTONE, Unit	Unit B Aquifer

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R3
SHEET 2 OF 3

PURPOSE OF BORE OBSERVATION

BORE SERIAL No 1064/69

PEARM. No. 631001101

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED SMITH

SECTION 11

CO-ORDS: E

DRILLER FEEBY

DOCKET No. 231/69

N

COMMENCED 29 MAR.69 COMPLETED 30 MAR.69

R.L. COLLAR (M.S.L) 45.13

DEPTH 268ft.

LOGGED BY B. HARRIS DATE On site

R.L. SURFACE 43.20

CASING

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING № GAMBIER PLAINS TEST AREA 1. See also Geophysical, Salinity, Potential etc. logs.				
			110		TERTIARY		<u>CALCARENITE</u> , bryozoal, offwhite, appears clean.			LIMESTONE, Unit 1	Aquifer
			120								
			130								
			140								
			150							GAMBIER Unit B	
			160				<u>CALCARENITE</u> , bryozoal, grey, with grey & black flint.				
			170				<u>CALCARENITE</u> , bryozoal, offwhite to very pale grey.				
			180								
			190								
			200								

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R3
SHEET 3 OF 3

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1064/69. Perm.No. 631001101

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED SMITH
DRILLER FEEBY

SECTION 11

CO-ORDS: E

COMMENCED 29/3/1969 COMPLETED 30/3/1969

DOCKET No. 231/69

N

LOGGED BY B.M. HARRIS DATE On site

R.L. COLLAR (M.S.L.) 45.13

DEPTH 268ft.

R.L. SURFACE 43.20

CASING As shown

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS		
								REMARKS SEE DRAWING N° GAMBIER PLAINS TEST AREA 1. Air blown samples. See also Electrical Logs, Salinity & Potential logs		
				210				<u>CALCARENITE</u> , bryozoal, offwhite to very pale grey.	GAMBIER LIMESTONE Unit 1	Aquifer
				220				<u>CALCARENITE</u> , bryozoal, very pale greenish offwhite, glauconitic.		
				230				<u>CALCARENITE</u> , bryozoal, off white.		
				240			TERTIARY	<u>CALCARENITE</u> , bryozoal, coarse shelly, white.	GAMBIER LIMESTONE Unit 2	Unit B
				250						
				260						
				270				END OF HOLE 268 feet		
				280						
				290						
				300						

BORE SERIAL No. 1066/69 . STATE NO. 631015202

FEATURE TEST AREA N°1

SECTION Adj. 152

DOCKET No. DM. 231/69

R.L. COLLAR (M.S.L)

DATE 6 NOV 69

R.L. SURFACE

CASING N: 1

WATERS CUT						DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	SALINITY, ANALYSIS TYPE, & NUMBER
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°						
			0				SAND, quartz, size 0.29 to 0.59 mm, subrounded, light grey						
			10				Becomes light brown						
			20				CLAY, Sandy non calcareous, grey						
			30				CALCARENITE, Poorly sorted, shelly clayey. light grey.						
			40		PLEISTOCENE								
			50										
			60										
			70		TERTIARY		Becoming bryozoal						
			80										
			90										
			100										
											BRIDGEWATER FORMATION		
											UNIT A Aquifer		
											GAMBIER LIMESTONE		
											UNIT B Aquifer		

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R.4.
SHEET. 2. OF. 2.

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1066/69. STATE NO. 631015202

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED SMITH

SECTION Adj. 152

CO-ORDS: E

DRILLER R. FEEBY

DOCKET No. DM. 231/69

N

COMMENCED 30 MAR 69 COMPLETED 31 MAR 69

R.L. COLLAR (M.S.L.)

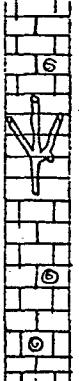
DEPTH 1200ft.

LOGGED BY J. DODSON

DATE 6 NOV. 69

R.L. SURFACE

CASING Nil

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	SALINITY, ANALYSIS TYPE, & NUMBER
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING Nº				
			110		TERTIARY		CALCARENITE, poorly sorted, shelly, bryozoal, light grey		GAMBIER LIMESTONE	UNIT B Aquifer	
			120								
			30								
			40								
			50								
			60								
			70								
			80								
			90								
			00								

BORE LOG PERCUSSION-ROTARY DRILLING

BORE N^o R5
SHEET 2 OF 4

PURPOSE OF BORE: OBSERVATION

BORE SERIAL No. 1068/69

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N^o1

HUNDRED SMITH

SECTION 2

CO-ORDS: E

DRILLER FEEBY

DOCKET No. 231/69

N

COMMENCED 31 MAR. 19 COMPLETED 1 APR. 69

R.L. COLLAR (M.S.L.) 36.05

DEPTH 307ft.

LOGGED BY B. HARRIS DATE On site

R.L. SURFACE 34.40

CASING

WATER CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N ^o GAMBIER PLAINS, TEST AREA 1. See also Geophysical, Potential, Salinity etc. logs.				
							<u>CALCARENITE</u> , bryozoal, shelly, pale grey, some flint fragments.				
			110				<u>CALCARENITE</u> , bryozoal, offwhite, appears clean limestone.				
			120				Becoming grey from 120ft.				
			130								
			140				Abundant flints from 140ft.				
			150								
			160								
			170								
			180								
			190								
			200								

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No. B5.
SHEET 3 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1068/69

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No. 1

HUNDRED SMITH

SECTION 2

DRILLER FEEBY

DOCKET No. 231/69

COMMENCED 31 MAR. 69 COMPLETED 1 APR. 69

R.L. COLLAR (M.S.L.) 36.05

LOGGED BY B. HARRIS DATE On site

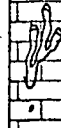
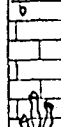
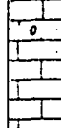
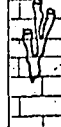
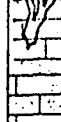
R.L. SURFACE 34.40

COORDS: E

N

DEPTH 307ft.

CASING

WATER CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT		
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N° GAMBIER PLAINS TEST AREA 1 See also Geophysical, Salinity, Potential etc., logs.		GAMBIER LIMESTONE, Unit 1, Unit B Aquifer			
			210				<u>CALCARENITE</u> , bryozoal, pale grey, with fragments of flint.					
			220									
			230									
			240									
			250									
			260				<u>CALCARENITE</u> , bryozoal, very pale brownish grey.					
			270									
			280									
			290									
			300									

BORE LOG PERCUSSION - ROTARY DRILLING

BORE No R5
SHEET 4 OF 4

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 1068/69

PROJECT. SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED. SMITH

SECTION 2 CO-ORDS: E

DRILLER. FEEBY

DOCKET No. 231/69 N

COMMENCED 31 MAR. 69 COMPLETED 1 APR. 69

R.L. COLLAR (M.S.L.) 36.05. DEPTH 307ft.

LOGGED BY B. HARRIS DATE On site

R.L. SURFACE 34.40 CASING

WATERS	CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
		CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS		
									REMARKS SEE DRAWING No GAMBIER PLAINS TEST AREA 1. See also Geophysical, Potential, Salinity etc. logs.	1	
									CALCARENITE, bryozoal, very pale brownish grey.		
					310				END OF HOLE 307 FT.	Unit	
					320					GAMBIER LIMESTONE	
					330					Unit B, Aquifer	
					340						
					350						
					360						
					370						
					380						
					390						
					400						

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION - ROTARY DRILLING

BORE No R6.
SHEET. 1 OF 3.

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 1072/69 Perm.No. 262000803

PROJECT. SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED. BRAY.

SECTION ADJ. 8

DRILLER. E. MURPHY

DOCKET No. 231/69

COMMENCED 9.4.1969 COMPLETED 9/4/1969

R.L. COLLAR (M.S.L.) 36.53

LOGGED BY B.M. HARRIS DATE On site

R.L. SURFACE. 34.61

CO-ORDS. E

N 300ft.

CASING 70ft. of 1.25in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	LITHOLOGIC UNIT	GEOLYDRAULIC UNIT
70ft of 1.25in P.V.C. casing									
			0				SAND, fine grained, silty, grey.		
			10				CALCARENITE, offwhite, very shelly.		
			20				CLAY, yellow, sandy (podsol).		
			30						
			40				CALCARENITE, shelly, yellow brown, hard.		
			50						
			60						
			70				CALCARENITE, bryozoal, shelly, offwhite to pale yellow brown. Flint from 45 to 60ft.		
			80						
			90						
			100				Flint band.		

BORE LOG PERCUSSION ROTARY DRILLING

BORE No R6
SHEET 2 OF 3

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1072/69 Perm.No. 262000803

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED BRAY

SECTION ADJ. 8

CO-ORDS: E

DRILLER MURPHY

DOCKET No. 231/69

N

COMMENCED 9.APR.69 COMPLETED 9.APR.69

R.L. COLLAR (M.S.L) 36.53

DEPTH 300 ft.

LOGGED BY B. HARRIS

DATE On site

R.L. SURFACE 34.61

CASING 70ft.of 1.25inPVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			110				CALCARENITE, bryozoal, offwhite to pale yellow brown.	Unit 1	Unit A, Aquifer
			120				CALCARENITE, bryozoal, pale grey. Flint band 114-116 ft.		
			130				Bands of flint to 200ft. Becomes offwhite.		
			140						
			150				Becomes grey.		
			160					Unit 1	Unit A, Aquifer
			170						
			180						
			190						
			200						

BORE LOG PERCUSSION · ROTARY DRILLING

BORE NO R6.
SHEET. 3 OF 3.

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1072/69 Perm.No. 262000803

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY

FEATURE TEST AREA N°1

DRILLER MURPHY

SECTION ADJ.8

CO-ORDS: E

COMMENCED 4 Apr.69 COMPLETED 4 Apr.69

DOCKET No. 231/69

N

LOGGED BY B. HARRIS

DATE On site

R.L. COLLAR (M.S.L) 36.53

DEPTH 300ft.

R.L. SURFACE 34.61

CASING 70ft.of 1.25in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			210					<u>CALCARENITE</u> , bryozoal, offwhite.	LIMESTONE	Unit 1 Aquifer
			220					Offwhite to pale grey 210-240ft.		
			230					Flint appearing.		
			240					<u>CALCARENITE</u> , offwhite with grey & black flint, glauconite. Interstitial porosity appears low - probably poor aquifer.	GAMBIER	Unit B
			250							
			260							
			270						Unit 2	
			280							
			290							
			300					<u>CALCARENITE</u> , white, bryozoal, glauconitic, appears good aquifer.		
								END OF HOLE 300 FT.		

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No. R7
SHEET 1 OF 4

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED BRAY

DRILLER FEEBY

COMMENCED 10.4.1969 COMPLETED 11.4.1969

LOGGED BY B.M. HARRIS

BORE SERIAL No. 1073/69 Perm.No. 262009001

FEATURE TEST AREA N°1

SECTION 90

COORDS: E

DOCKET No. 231/69

N

R.L. COLLAR (M.S.L.) 32.77 DEPTH 320ft.

R.L. SURFACE 30.55

CASING AS SHOWN

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS		
								SEE DRAWING N° GAMBIER PLAINS TEST AREA. Mud drilled. See also Electrical Logs, Salinity Logs, Potential Logs.		
								SAND, fine to medium grained, grey.		
								CALCARENITE, shelly, yellow brown. Cavity 4-7 ft. Hard drilling 7-20ft. No samples obtained from 4-19ft.		
								Becoming offwhite, hard angular fragments.		
								Some fragments of flint and siliceous calcarenite.		
								CALCARENITE, bryozoal, very pale yellow brown.		
								A few fragments of flint from 70ft.		

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R7
SHEET 2 OF 4

PURPOSE OF BORE OBSERVATION
PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY
DRILLER FEEBY
COMMENCED 10 APR. 69 COMPLETED 11 APR. 69
LOGGED BY B. HARRIS DATE On site

BORE SERIAL No 1073/69
FEATURE TEST AREA No 1
SECTION 90 CO-ORDS: E
DOCKET No 231/69 N
R.L. COLLAR (M.S.L.) 32.77 DEPTH 320ft.
R.L. SURFACE 30.55 CASING As shown

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No GAMBIER PLAINS TEST AREA	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			110				1 See also Geophysical, Salinity, Potential etc. logs.		
			120				CALCARENITE, bryozoal, grey, with black flint.		
			130				CALCARENITE, bryozoal, offwhite, glauconitic.	Unit 1	
			140				CALCARENITE, pale grey to offwhite, bryozoal shelly, with flint.		
			150		TERTIARY				
			160						
			170						
			180				Becoming glauconitic. 180-190ft.	GAMBIER LIMESTONE	Unit B, Aquifer
			190				CALCULUTITE, bryozoal, grey with flint.		

BORE LOG PERCUSSION ROTARY DRILLING

BORE NO R7
SHEET 3 OF 4

PURPOSE OF BORE OBSERVATION BORE SERIAL No 1073/69
PROJECT SOUTH EAST WATER RESOURCES FEATURE TEST AREA N°1
HUNDRED BRAY SECTION 90 CO-ORDS E
DRILLER FEEBY DOCKET No. 231/69 N
COMMENCED 10Apr. 69 COMPLETED 11Apr. 69 R.L. COLLAR (M.S.L) 32.77 DEPTH 320ft.
LOGGED BY B. HARRIS DATE On site R.L. SURFACE 30.55 CASING

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N° GAMBIER PLAINS TEST AREA 1. See also Geophysical, Salinity, & Potential etc. logs.				
			210		TERTIARY		<u>CALCILUTITE</u> , bryozoal, grey, with flint.			GAMBIER LIMESTONE, Unit 1 Unit B, Aquifer	
			220								
			230								
			240								
			250								
			260				<u>CALCARENITE</u> , bryozoal, shelly, very pale brown - offwhite.				
			270								
			280								
			290								
			300								

7.07.4

DEPARTMENT OF MINES SOUTH AUSTRALIA

BORE LOG PERCUSSION ROTARY DRILLING

BORE No R7
SHEET 4 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No 1073/69

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED BRAY

SECTION 90

CO-ORDS: E

DRILLER FEEBY

DOCKET No 231/69

N

COMMENCED 10 APR. 69 COMPLETED 11 APR. 69

R.L. COLLAR (M.S.L) 32.77

DEPTH 320ft.

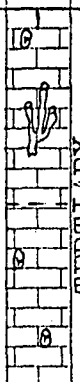
LOGGED BY B. HARRIS

DATE

R.L. SURFACE 30.55

CASING

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			310					CALCARENITE, bryozoal, shelly, very pale brown - offwhite.	UNIT 1	Aquifer
			320					Fragments of white calcarenite, appearing.		
			330					END OF HOLE 320 FT.		
			340							
			350							
			360							
			370							
			380							
			390							
			400							

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION - ROTARY DRILLING

BORE No. R.8
SHEET. 1 OF 4

PURPOSE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED LAKE GEORGE

DRILLER E. MURPHY

COMMENCED 11.4.69 COMPLETED 12.4.69

LOGGED BY B. HARRIS DATE July 69

BORE SERIAL No. 1074/69

FEATURE TEST AREA No. 1

SECTION 12W

DOCKET No. 231/69

R.L. - COLLAR (A.S.L.) Peg. 37.82 DEPTH 320 ft.

R.L. SURFACE 35.29 CASING 40' of 6" P.V.C.

No. 450001201

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	
	7-10.		4								
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N° See also geophysical, salinity, potential etc.				
40ft. of 6" P.V.C. casing			0				TOPSOIL, SAND, fine grained, very silty, organic, black.			BRIDGEWATER FORMATION Unit A, Aquifer	
			10				CALCARENITE, yellow brown, shelly, some bryozoa, strongly cemented, calcreted at top.				
			20				CALCARENITE, yellow brown to pale grey, coarse shelly, some bryozoal, strongly cemented.				
			30				Moderately cemented.				
			40		PLEISTOCENE		Grey to black flint appearing.			GAMBIER LIMESTONE, Unit 1 Unit B, Aquifer	
			50								
			60								
			70				CALCARENITE, offwhite to very pale yellow brown, shelly bryozoal.				
			80								
			90				Black flint appearing.				
			100								

BORE LOG PERCUSSION • ROTARY DRILLING

BORE No R.8
SHEET 2 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1074/69

No. 450001201

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED LAKE GEORGE

SECTION 12W

CO-ORDS: E

DRILLER E. MURPHY

DOCKET No. 231/69

COMMENCED 11.4.69 COMPLETED 12.4.69

R.L. COLLAR (M.S.L.) 37.82

DEPTH 320 ft.

LOGGED BY B. HARRIS DATE July 69

R.L. SURFACE 35.29

CASING 40' of 6" P.V.C.

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED
	7-10	4		

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	LITHOLOGIC UNIT	GEOLYDRAULIC UNIT
--------	-----------	-------------	---------------	------------------	-----	------------------	------------------------	-----------------	-------------------

See: also geophysical, salinity, potential etc.

CALCARENITE offwhite to very pale yellow brown, shelly bryozoal, hard strongly cemented fragments, with black flint.

Grey and black flint present.

CALCARENITE, off white, bryozoal.

Some grey flint appearing becoming offwhite to pale grey.

GAMBIER LIMESTONE Unit 1
Unit B, Aquifer

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R.8
SHEET 3 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1074/69

No. 450001201

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED LAKE GEORGE

SECTION 12W

DRILLER E. MUPRHY

DOCKET No. 231/69

CO-ORDS: E

COMMENCED 11.4.69 COMPLETED 12.4.69

R.L. COLLAR (W.S.) 37.82

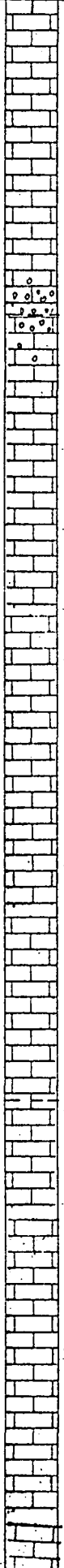
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LOGGED BY B. HARRIS DATE July 69

R.L. SURFACE 35.29

DEPTH 320 ft.
CASING 40' of 6" P.V.C.

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	7-10	4				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No 1 See also geophysical, salinity, potential etc.	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			210		TERTIARY		CALCARENITE, offwhite to pale grey. Some grey flint.	GAMBIER LIMESTONE Unit 1	Unit B, Aquifer
			220				Black flint appearing.		
			230						
			240						
			250						
			260						
			270				Becoming glauconitic.		
			280						
			290						
			300						

BORE LOG PERCUSSION • ROTARY DRILLING

BORE No R.8
SHEET. 4 OF 4

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 1074/69. No. 450001201

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED LAKE GEORGE

SECTION 12W

DRILLER E. MURPHY

DOCKET No. 231/69

CO-ORDS: E

COMMENCED 11.4.69 COMPLETED 12.4.69

R.L. COLLAR (M.S.C) 37.82

DEPTH 320ft.

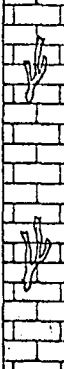
LOGGED BY B. HARRIS

DATE July 1969

R.L. SURFACE 35.29

CASING 40' of 6" PVC.

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	7-10	4				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No 1 See also geophysical, salinity, potential etc.	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			310			TERTIARY		CALCARENITE, white, bryozoal.	GAMBIER LIMESTONE, Unit 2	Unit B, Aquifer.
			320					END OF HOLE 320 FEET		
			330							
			340							
			350							
			360							
			370							
			380							
			390							
			400							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R.9.
SHEET 1 OF 4.

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1076/69

No. 262002204

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDREDBRAY

SECTION 22

COORDS: E

DRILLER E. MURPHY

DOCKET No. 231/69

N

COMMENCED 15.4.69

COMPLETED 15.4.69

R.L. COLLAR (M.S.L) 7.79

DEPTH 330 ft.

LOGGED BY B. HARRIS

DATE July 69.

R.L. SURFACE

5.31

CASING 60 ft. of 3 in

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		PVC		LITHOLOGIC UNIT		GEOHYDRAULIC UNIT	
8															
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING NO GAMBIER PLAINS.. SEE ALSO GEOPHYSICAL, SALINITY PPOTENTIAL ETC.				BRIDGEWATER FORMATION		GAMBIER LIMESTONE Unit 1	
60 ft. of 3" - PVC. Casing						PLEISTOCENE	TOPSOIL, CLAY, black silty.				Unit A, Aquifer		Unit B, Aquifer		
							CALCARENITE, very pale yellow brown to pale grey coarse shelly, sandy in part.								
							CALCARENITE, offwhite, shelly bryozoal grading to CALCIRUDITE.								
							CALCARENITE, offwhite to pale yellow brown, bryozoal, slightly glauconitic, becoming coarser grained.								
							Flint, black.								
							CALCILUTITE, grey, bryozoal.								
							CALCARENITE, offwhite, bryozoal, with flint.								

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R.9
SHEET 2 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1076/69

No. 262002204

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED BRAY

SECTION 22

CO-ORDS: E

DRILLER E. MURPHY

DOCKET No. 231/69

N

COMMENCED 15.4.69 COMPLETED 15.4.69

R.L. COLLAR (M.S.L) 7.79

DEPTH 330 ft.

LOGGED BY B. HARRIS DATE July 69

R.L. SURFACE 5.31

CASING 60' of 3" PVC

WATER CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
8											
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No 1 GAMBIER PLAINS TEST AREA 1 SEE ALSO GEOPHYSICAL, SALINITY POTENTIAL ETC.		GAMBIER LIMESTONE Unit 1 Unit B, Aquifer	
			110					CALCIRUDITE, offwhite, bryozoal, with abundant black flint.			
			120								
			130					CALCARENITE, offwhite, bryozoal with abundant black flint.			
			140					Grey and black flint.			
			150					Flint content reduced.			
			160								
			170					Increased flint content.			
			180								
			190					Abundant flint.			

GAMBIER LIMESTONE Unit 1
Unit B, Aquifer

BORE LOG PERCUSSION · ROTARY DRILLING

BORE No R.9
SHEET 3 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1076/69

No. 262002204

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED BRAY

SECTION 22

CO-ORDS: E

DRILLER E. MURPHY

DOCKET No. 231/69

N

COMMENCED 15.4.69 COMPLETED 15.4.69

R.L. COLLAR (M.S.L) 7.79

DEPTH 330 ft.

LOGGED BY B. HARRIS DATE July 69

R.L. SURFACE 5.31

CASING 60' of 3" PVC

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
8							
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°
							GAMBIER PLAINS TEST AREA 1. SEE ALSO GEOPHYSICAL, SALINITY POTENTIAL ETC.
			210				CALCARENITE, offwhite bryozoal, abundant flint.
			220				CALCARENITE grading to CALCIRUDITE off-white, bryozoal with abundant flint.
			230				
			240				
			250				
			260				
			270				
			280				
			290				
			300				

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R.9
SHEET 4 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1076/69 No. 262002204

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No1

HUNDRED BRAY

SECTION 22

DRILLER E. MURPHY

CO-ORDS: E

COMMENCED 15.4.69 COMPLETED 15.4.69

DOCKET No 231/69

N

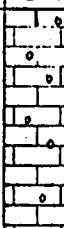
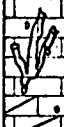
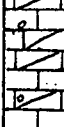
LOGGED BY B. HARRIS DATE July 69

R.L. COLLAR (M.S.L) 7.79

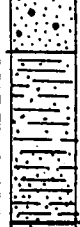
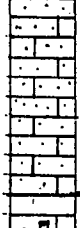
DEPTH 330 ft.

R.L. SURFACE 5.31

CASING 60' of 3" PVC

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	8									
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING NO	GAMBIER LIMESTONE	Unit B, Aquifer
			310					<u>CALCARENITE</u> grading to <u>CALCIRUDITE</u> offwhite, bryozoal, with grey and black flint.		
			320							
			330					END OF HOLE 330 ft.		
			340							
			350							
			360							
			370							
			380							
			390							

PURPOSE OF BORE		OBSERVATION		DEPARTMENT OF MINES • SOUTH AUSTRALIA		BORE LOG PERCUSSION • ROTARY DRILLING		BORE No R10	
PROJECT SOUTH EAST WATER RESOURCES		HUNDRED BRAY		DRILLER E. MURPHY		COMMENCED 12.4.69		COMPLETED 14.4.69	
LOGGED BY J. DODSON		DATE 6.11.69		BORE SERIAL No. 1075/69		FEATURE TEST AREA No. 1 State No. 262000505		SECTION 5	
				DOCKET No. DM.231/69		CO-ORDS: E		N	
				R.L. COLLAR (M.S.L) 24.08.		DEPTH 310ft.		CASING AB shown.	
				R.L. SURFACE 21.64					

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED			LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	SALINITY ANALYSIS TYPE, & NUMBER
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No			
			10		PLEISTOCENE		SAND, .29 to .59 mm, subrounded, brown light brown.	BRIDGEWATER FORMATION	Unit A	
			20				CLAY, slightly sandy, brown.			
			30				SAND, subrounded weakly cemented.			
			40		TERTIARY		CALCARENITE, strongly cemented, small amount of quartz sand, light brown.	GAMBIER LIMESTONE	Unit 1	Unit B
			50				Becomes bryozoal.			
			60				Black flint occurs.			
			70		TERTIARY		CALCARENITE, size 0.59 to 1.17 mm, slightly shelly, bryozoal, pale grey.			
			80							
			90							
			100		TERTIARY					

TRIM LINE

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R10
SHEET. 2 OF 4

PURPOSE OF BORE. OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED BRAY

DRILLER E. MURPHY

COMMENCED 12.4.69 COMPLETED 14.4.69

LOGGED BY J. DODSON DATE 6.11.69

BORE SERIAL No. 1075/69

FEATURE TEST AREA No1 State No. 262000505

SECTION 5

CO-ORDS: E

DOCKET No. DM.231/69

R.L. COLLAR (M.S.L) 24.08

R.L. SURFACE 21.64

DEPTH 310ft.

CASING As shown.

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOMORPHOLOGIC UNIT	SALINITY ANALYSIS TYPE, & NUMBER
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No			
			110					CALCARENITE, Size 0.59 to 2.36 mm, slightly shelly, bryozoal, pale grey. Flint up to 20%.			
								Flint band.			
			120					Flint band.			
			130								
			140								
			150								
			160								
			170								
			180								
			190					Little flint.			
			200					No flint.			

BORE LOG PERCUSSION · ROTARY DRILLING

BORE No R10.
SHEET 3. OF 4.

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 1075/69

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY

FEATURE TEST AREA No1 State No. 262000505

DRILLER E. MURPHY

SECTION 5 CO-ORDS: E

COMMENCED 12.4.69 COMPLETED 14.4.69

DOCKET No. DM.231/69

N

LOGGED BY J. DODSON DATE 6.11.69

R.L. COLLAR (M.S.L) 24.08

DEPTH 310ft.

R.L. SURFACE 21.64

CASING As shown.

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	SALINITY ANALYSIS TYPE, & NUMBER
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS			
								REMARKS SEE DRAWING No			
								CALCARENITE size 0.59 to 1.17 mm, bryozoal, off white.			
				210							
				220				Colour becomes grey.			
				230				Flint occurs, black.			
				240				Flint band.			
				250							
				260							
				270							
				280							
				290							
				300							

TRIM LINE

BORE LOG PERCUSSION · ROTARY DRILLING

BORE No R10
SHEET 4 OF 4

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1075/69

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No. 5 State No. 262000505

HUNDRED BRAY

SECTION 5

CO-ORDS: E

DRILLER E. MURPHY

DOCKET No. DM.231/69

N

COMMENCED 12.4.69 COMPLETED 14.4.69

R.L. COLLAR (M.S.L.) 24.08

DEPTH 310ft.

LOGGED BY J. DODSON DATE 6.11.69

R.L. SURFACE 21.64

CASING As shown.

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	SALINITY, ANALYSIS TYPE, & NUMBER
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS			
				310				REMARKS SEE DRAWING No. 1	GAMBIER LIMESTONE	Aquifer Unit B.	
				20							
				30							
				40							
				50							
				60							
				70							
				80							
				90							
				00							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No R11
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1077/69

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED WATERHOUSE

SECTION 320

CO-ORDS: E

DRILLER R. FEBEY

DOCKET No D.M.231/69

N

COMMENCED 16.4.69 COMPLETED 16.4.69

R.L. COLLAR (M.S.L.) 6.05

DEPTH 40ft.

LOGGED BY JIM DODSON

DATE Nov. 69

R.L. SURFACE 4.38

CASING 12ft. of 1 1/2" PVC

WATER CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	SALINITY, ANALYSIS TYPE, & NUMBER
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING Nº			
								Bore collapsed and abandoned in May 1969.			
								TOPSAND - dark, sands Humus, uncemented calcareous.			
			10					SAND - .59-1.17mm. - mostly calcareous uncemented - with large shell fragments, fawn.			
								SAND - .29-1.17 - well graded - mostly calcareous - uncemented, grey.			
			20					SAND - .59-1.17, mostly calcareous, poorly cemented, fawn.			
			30					SAND - .29 - .59, calcareous, poorly cemented, with some clay, grey. Grey clay lense at 31' calcareous. Large oyster shells and shell fragments at 40 ft.			
			40					END OF HOLE 40'			
			50								
			60								
			70								
			80								
			90								
			100								

BORE LOG PERCUSSION · ROTARY · DRILLING

BORE NO. P. 1.
SHEET. 1. OF. 6

PURPOSE OF BORE OBSERVATION

HIRER. MINES DEPARTMENT

HUNDRED. SMITH

DRILLER A. TUCKER

COMMENCED 7.2.69 COMPLETED 18.2.69

LOGGED BY W. MORTON/ DATE on site

BORE SERIAL No. 50/69

ADDRESS ADELAIDE

SECTION ADJ. 34

DOCKET No. 1939/68

R.L. COLLAR (M.S.L.)

R.L. SURFACE

CO-ORDS: E

N

DEPTH 555 FEET

CASING 169 ft. of 8 in.

DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	TOTAL SALTS PARTS PER MILLION	ANALYSIS No.

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS	DESCRIPTION	Test Area
							SEE ELECTRICAL LOGS; SALINITY LOGS, DRILLING TIME LOG, POTENTIAL LOG.		
							Gambier Plains		
							0 - 5ft.	CLAY	calcareous, sandy, brown.
							5 - 35ft.	CALCARENITE	cream, small amount of silt-size quartz. Essentially coarse grained shell fragments. Some fragments of black flint. Content of bryozoa increases towards base. (AQUIFER)
							35 - 80ft.	CALCIRUDITE	mainly broken flint fragments, in a matrix of silt to sand size shell fragments plus bryozoa. Cream colour. Hole making very little water. Less flint at 70-80 feet.
							80 - 90ft.	CALCARENITE	coarse, shell fragments of bryozoa limestone. Some flint. Clean from silt particles. Hole making water well. Cream

DEPARTMENT OF MINES SOUTH AUSTRALIA
BORE LOG PERCUSSION ROTARY DRILLING

BORE No. P.1.
SHEET. 2 OF 6

PURPOSE OF BORE MINES DEPARTMENT
HIRER MINES DEPARTMENT
HUNDRED SMITH
DRILLER A. TUCKER
COMMENCED 7.2.69 COMPLETED 18.2.69
LOGGED BY W. MORTON/B. DATE ON SITE

BORE SERIAL - No. 50/69
ADDRESS ADELAIDE.
SECTION Adj. 34 CO-ORDS: E N
DOCKET No. 1939/68
R.L. COLLAR (M.S.L.)
R.L. SURFACE DEPTH 555 FEET
CASING 169 feet of 8in.

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	TOTAL SALTS PARTS PER MILLION	ANALYSIS No.

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS
							SEE ELECTRICAL LOGS; SALINITY LOGS, DRILLING TIME LOG, POTENTIAL LOG Gambier Plains DESCRIPTION Test Area
			110				100 - 115ft. <u>CALCARENITE</u> , as above, with coarser fragments, cleaner and slightly harder. Drills as hard and soft bands. 110-115ft. Shell fragments much smaller. Possibly partly confining.
			120				120 - 130ft. <u>CALCARENITE</u> , mainly coarse bryozoa fragments, with much silt size. Becoming clayey at base. Possibly partly confining. Some broken flint.
			130				130 - 145ft. <u>CALCARENITE</u> , as above with less flint and more marl. Slightly glauconitic. Drilling 5 feet per 5 minutes.
			140				145 - 155ft. <u>CALCILUTITE</u> , Grey (confining bed?) <u>CALCARENITE</u> , as for 130-145ft. Cuts out at about 146 feet re drilling. Hole not making water. Casing stuck temporarily at 152 feet.
			150				155 - 165ft. <u>CALCILUTITE</u> , grey } Drills as <u>CALCARENITE</u> , cream } hard and soft bryozoal, } bands. Drilling time increased from FLINT, black } to 10 mins./5 feet. Hole making water slowly-partially confining.
			160				165 - 170ft. <u>CALCILUTITE</u> , dark grey (colour change), some flint and bryozoa limestone fragments. Hole making water slowly. 10 mins. drilling time.
			170				170 - 180ft. <u>CALCIRUDITE</u> , cream, bryozoal, consolidated. Very clean samples. Appears to be good aquifer. Few nodules of grey, silicified petal limestone. Hole making water well - unable to lower water by bailing. Drilling rate 5 feet/6 mins.
			180				190 - 195ft. <u>CALCARENITE</u> , marly, cream, bryozoal, slightly glauconitic. Interstitial permeability seems very low. Probably part confining.
			190				195 - 200ft. <u>CALCARENITE</u> , as above with more glauconite. <u>CALCILUTITE</u> , cream. Drills as alternating bands

BORE LOG PERCUSSION · ROTARY DRILLING

BORE No 1.1
SHEET 3 OF 6PURPOSE OF BORE OBSERVATION
HIRER MINES DEPARTMENT
HUNDRED SMITH
DRILLER A. TUCKER
COMMENCED 7.2.69 COMPLETED 18.2.69
LOGGED BY W. MORTON/ DATE ON SITEBORE SERIAL No. 50/69
ADDRESS ADELAIDE.
SECTION ADJ. 34
DOCKET No. 1939/68
R.L. COLLAR (M.S.L.)
R.L. SURFACE

CO-ORDS: E

N

DEPTH 555 feet

CASING 169 ft. of 8 in

WATERS CUT

DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	TOTAL SALTS PARTS PER MILLION	ANALYSIS No.

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS
							SEE ELECTRICAL LOGS; SALINITY LOGS, DRILLING TIME LOG, POTENTIAL LOG.
							Gambier Plains DESCRIPTION Test Area
			200				200 - 205ft. <u>CALCARENITE</u> , cream, bryozoal and echinoid spines. Clean sample. Drilling time 5ft/2mins. Probably aquifer.
			210				205 - 225ft. <u>CALCARENITE</u> , as above. <u>CALCILUTITE</u> , grey, bryozoal, few flint fragments. Drills as alternating bands. Drilling time 5 feet/5 mins.
			220				
			230				225 - 230ft. <u>CALCARENITE</u> , cream, bryozoal. Very clean sample.
							230 - 235ft. <u>CALCARENITE</u> , as above } Drills as <u>CALCILUTITE</u> , grey } alternating bryozoal } bands.
			240				(Marly) 235 - 240ft. <u>CALCARENITE</u> , cream, bryozoal, marly, slightly glauconitic. Appears poor aquifer.
							240 - 250ft. <u>CALCARENITE</u> ,) As for 230 - 235 <u>CALCILUTITE</u>) feet.
			250				250 - 255ft. <u>CALCARENITE</u>) As above, but very <u>CALCILUTITE</u>) marly and more glauconitic. Drilling time increased to 8 mins.
			260				255 - 265ft. <u>CALCARENITE</u> , cream, glauconitic, clean sample. Aquifer? Drilling time 5 feet/7 mins.
			270				265 - 280ft. <u>CALCILUTITE</u> , grey, bryozoal. Drilling time 5 feet/10 mins. Hard band of white silicified marl at 268 ft. Lumps of white clay from 275-280 ft. Confining Bed?
			280				280 - 285ft. <u>CALCARENITE</u> , bryozoal, glauconitic, grey/cream. Few lumps of glauconitic marl.
			290				285 - 295ft. <u>CALCARENITE</u> , white, bryozoal, few chips of grey flint. Drills with hard bars up to 6 inches thick.
							295 - 300ft. <u>CALCARENITE</u> , white, bryozoal, with lumps of calcilutite.

BORE LOG PERCUSSION · ROTARY DRILLING

BORE NO. P.1.
SHEET. 4 OF 6.

PURPOSE OF BORE OBSERVATION
HIRER MINES DEPARTMENT
HUNDRED SMITH
DRILLER A. TUCKER
COMMENCED 7.2.69 COMPLETED 18.2.69
LOGGED BY W. HORTON/ B. HARRIS DATE ON SITE

BORE SERIAL No. 50/69
ADDRESS ADELAIDE.
SECTION ADJ. 34
DOCKET No. 1939/68
R.L. COLLAR (M.S.L.)
R.L. SURFACE
CO-ORDS: E N
DEPTH 555 FEET
CASING 169ft. of 8 in.

DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	TOTAL SALTS PARTS PER MILLION	ANALYSIS No.

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS	DESCRIPTION	Test Area.
			300				300 - 310ft.	<u>CALCILUTITE</u> , white.	
			310				310 - 328ft.	<u>CALCILUTITE</u> , grey, bryozoal. 320-325 ft. few chips of calcarenite. 325-328ft. few lumps of white clay.	
			320				328 - 340 ft.	<u>CALCARENITE</u> , white, bryozoal. Drills as hard and soft bars.	
			330				340 - 350ft.	<u>CALCARENITE</u> , as above, getting softer. Few lumps of grey-white bryozoal <u>CALCILUTITE</u> .	
			340				350 - 360ft.	<u>CALCARENITE</u> , bryozoal, white <u>CALCILUTITE</u> , bryozoal, grey.	
			350				360 - 380ft.	<u>CALCILUTITE</u> , bryozoal, grey-white.	
			360				380 - 385ft.	<u>CALCARENITE</u> , bryozoal, glauconitic, white.	
			370				385 - 390ft.	<u>CALCARENITE</u> , bryozoal, white. <u>CALCILUTITE</u> , bryozoal, grey.	
			380				390 - 395ft.	<u>CALCILUTITE</u> , bryozoal, grey.	
			390				395 - 405ft.	<u>CALCILUTITE</u> , as above. <u>CALCARENITE</u> , bryozoal, grey-white, small fragments of flint.	

BORE LOG PERCUSSION · ROTARY DRILLING

BORE N°

SHEET. OF

PURPOSE OF BORE OBSERVATION

HIRER MINES DEPARTMENT

HUNDRED SMITH

DRILLER A. TUCKER

COMMENCED 7.2.69 COMPLETED 18.2.69

LOGGED BY W. MORTON / DATE ON SITE

BORE SERIAL No. 50/69

ADDRESS ADELAIDE.

SECTION ADJ. 34

DOCKET No. 1939/68

R.L. COLLAR (M.S.L.)

R.L. SURFACE

CO-ORDS: E

N

DEPTH 555 Feet

CASING 169ft. of 8 in.

DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	TOTAL SALTS PARTS PER MILLION	ANALYSIS No.

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS
							SEE ELECTRICAL LOGS; SALINITY LOGS, DRILLING TIME LOG, POTENTIAL LOG.
							Gambier Plains DESCRIPTION Test Area.
							395 - 405ft. <u>CALCILUTITE</u> , as above. <u>CALCARENITE</u> , bryozoal, grey-white, small fragments of flint.
			410				405 - 415ft. <u>CALCILUTITE</u> , bryozoal, grey. Hard bar of flint at 407 to 407½ ft., and throughout 410-415 as thin layers, grey and black.
			420				415 - 442½ft. <u>CALCARENITE</u> , grey, } Drilling time bryozoal } 5 ft/10 mins. <u>CALCILUTITE</u> , grey. } <u>FLINT</u> , grey. }
			430				HARD BAR at 437½ feet. <u>FLINT</u> , grey, siliceous calcarenite. (See ROBE BORE No.1) Drilling Time 23 minutes.
			440				
			450				442½ - 465ft. <u>CALCILUTITE</u> , grey. <u>FLINT</u> , grey. <u>CALCARENITE</u> , bryozoal, grey. Chips of white siliceous clay. Drills as hard and soft bars. Drilling Time 5 feet/20mins.
			460				
			470				465 - 540ft. <u>CALCILUTITE</u> , Dark grey. Glauconitic and bryozoal. Some fragments of calcarenite still present. <u>FLINT</u> , grey. Some white silicified clay. Drilling as a very sticky clay, average time 5 feet.40 mins. Hard bar at 500 feet - white silicified clay. Hard bar at 507-508 feet. Alternating hard bars from 525- 535 feet.
			480				
			490				

BORE LOG PERCUSSION · ROTARY DRILLING

PURPOSE OF BORE OBSERVATION
HIRER. MINES DEPARTMENT
HUNDRED SMITH
DRILLER A. TUCKER
COMMENCED 7.2.69 COMPLETED 18.2.69
LOGGED BY W. MORTON / DATE ON SITE

BORE SERIAL No. 50/69
ADDRESS ADELAIDE.
SECTION ADJ.34
DOCKET No. 1939/68
CO-ORDS: E N
R.L. COLLAR (M.S.L.) DEPTH 555 feet
R.L. SURFACE CASING 169 ft. / 8 incl

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	TOTAL SALTS PARTS PER MILLION	ANALYSIS No.

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS	DESCRIPTION	Test Area
			510				465 - 540ft.	CALCILUTITE, Dark grey. Gauconitic and bryozoal. Some fragments of calcarenite still present.	
			520					FLINT, grey. Some white silicified clay.	
			530					Drilling as a very sticky clay, average time 5 feet/40 mins.	
			540					Hard bar at 500 ft. - white silicified clay.	
			550				540 - 555ft.	CALCILUTITE, glauconitic, dark grey, bryozoal. Slightly brown tinge apparent.	
								Mottled grey and brown colour (essentially grey-green) from 550 - 555 feet.	
			560				END OF BORE HOLE 555 FEET		
			570						
			580						
			590						

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION - ROTARY DRILLING

BORE No P2
SHEET 1 OF 3

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED BRAY

DRILLER A.V. TUCKER

COMMENCED 19.2.69 COMPLETED 24.2.69

LOGGED BY B.M. HARRIS DATE 26.2.69

BORE SERIAL No 54/69 262000802

FEATURE TEST AREA No 1

SECTION 8

DOCKET No 231/69

R.L. COLLAR (M.S.L) 35.25

R.L. SURFACE 33.05

CO-ORDS: E

N

DEPTH 300ft

CASING 118ft. of 8" in.

WATER CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING Nº See also Geophysical, Salinity and potential logs.		FORMATION	UNIT A, AQUIFER
118ft. of 8in. steel casing			10		PLEISTOCENE		CALCARENITE - white to yellow brown to pale grey, consists of strongly to weakly cemented calcareous fragments. Porosity appears to vary from high to very low.		BRIDGEWATER	UNIT A, AQUIFER
			20							
			30				CALCARENITE - as above with abundant flint, bryozoa and shelly fragments and fragments of off white bryozoal calcarenite.			
			40							
			50		TERTIARY		CALCARENITE - off white to aple grey bryozoal, mainly weakly cemented, with dark grey flint. 45 to 50ft, A few fragments of flint 50 to 60ft.		UNIT 1	UNIT B, AQUIFER
		60				Very little flint.				
		70				Off white to very pale yellow brown. No flint from 65ft.		LIMESTONE		
		80				Bryozoal content increasing.				
		90				CALCIRUDITE - off white, bryozoal, shelly, appears good aquifer.		GAMBIER		
		100				CALCERNITE - offwhite, bryozoal shelly, abundant large fragments of flint.				

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION - ROTARY DRILLING

BORE N^o P2
SHEET 2 OF 3

PURPOSE OF BORE . OBSERVATION

PROJECT . SOUTH EAST WATER RESOURCES
HUNDRED . BRAY

DRILLER . A.V. TUCKER

COMMENCED 19.2.69 . COMPLETED 24.2.69

LOGGED BY B.M. HARRIS . DATE 26.2.69

BORE SERIAL No. 54/69

262000802

FEATURE TEST AREA N^o1

SECTION 8

CO-ORDS: E

DOCKET No. 231/69

N

R.L. COLLAR (M.S.L) 35.25

DEPTH

300ft.

R.L. SURFACE 33.03

CASING 118ft. of 8 in.

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED					
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N ^o See also Geophysical, Salinity and Potential Logs.					LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
118ft. of 8" steel casing					TERTIARY		CALCARENITE - white to offwhite, fine grained, coarse silty, bryozoal, abundant flint fragments.					UNIT 5	AQUIFER
			110				-- Flint content decreasing.						
			120				-- Lumps of calcisiltite.						
			130				CALCARENITE - grading to CALCIRUDITE, bryozoal, shelly, offwhite; some flint from 125 to 130 feet, and increases from 130ft.					UNIT B	LIMESTONE
			140				-- Becoming grey.						
							-- Lumps of Calcisiltite 140-145ft.						
			150				-- Lumps of calcilutite 145-150ft.						
			160				CALCARENITE - bryozoal, very pale grey to off white, abundant grey to black flint.					GAMBIER	
			170				-- Fragments of hard very fine grained calcarenite appearing.						
			180				CALCARENITE - fine grained, very silty, grey, bryozoal with pale grey flint.						
			190		CALCARENITE - very pale grey, bryozoal shelly, with pale grey flint.								
							Becoming off white from 185ft. with less flint.						
							Flint content increases again.						

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION-ROTARY DRILLING

BORE No P2
SHEET. 3. OF. 3.

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED BRAY

DRILLER AV, TUCKER

COMMENCED 19.2.69 COMPLETED 24.2.69

LOGGED BY B.M. HARRIS DATE 26.2.69

BORE SERIAL No. 54/69 2620Q0802

FEATURE TEST AREA No 1

SECTION 8

DOCKET No. 231/69

R.L. COLLAR (M.S.L.) 35.25

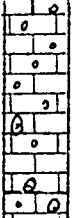
R.L. SURFACE 33.03

CO-ORDS: E

N

DEPTH 300ft.

CASING 118ft. of 8 in.

WATER CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING NO See also Geophysical, Salinity, & Potential Logs.				
			210				CALCARENITE - very pale grey, bryozoal, shelly, with pale grey flint, abundant flint fragments.			GAMBIER LIMESTONE UNIT I UNIT B AQUIFER	
							A few lumps of grey clayey silt.				
							Flint content reduced from 215ft.				
			220				Becoming offwhite.				
			230							GAMBIER LIMESTONE UNIT I UNIT B AQUIFER	
			240								
			250								
			260								
			270				CALCARENITE - bryozoal, offwhite, appears to be more silty. A few lumps of grey Calcilutite or Calcisiltite 250 - 255ft.			GAMBIER LIMESTONE UNIT I UNIT B AQUIFER	
							Lumps of offwhite calcisiltite.				
							Lumps of offwhite calcisiltite.				
			280								
			290				CALCARENITE - white bryozoal with lumps of offwhite calcisiltite.			UNIT II	
			300				CALCARENITE - white, bryozoal.				

BORE LOG PERCUSSION ROTARY DRILLING

BORE No P3
SHEET 1 OF 5

PURPOSE OF BORE OBSERVATION BORE SERIAL No 56/69 Perm.No.262000504
PROJECT SOUTH EAST WATER RESOURCES FEATURE TEST AREA N°1
HUNDRED BRAY SECTION 5 CO-ORDS: E
DRILLER W.H. JAMES DOCKET No 231/69 N
COMMENCED 25 Jan '69 COMPLETED 1 Mar '69 R.L. COLLAR (M.S.L) 2133 DEPTH 490 ft.
LOGGED BY B.HARRIS DATE on Site R.L. SURFACE 20.87 CASING 60ft of 8 inch

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS		
60ft. of 8 in STEEL CASING								SEE DRAWING N° GAMBIER PLAINS TEST AREA 1 - See ALSO GEOPHYSICAL LOGS, SALINITY & POTENTIAL LOGS		
								SAND - fine to medium grained, v. silty, dark brown		
								CLAY - sandy, yellow brown, with fragments of aeolianite in coarse sandy to gritty sizes.		
				10						
								CALCARENITE, yellow brown. Consists of weakly cemented shelly and calcareous fragments. Appears very porous, probably good aquifer.		
				20						
								Flint appearing as accessory		
				30						
								CLAY, very silty, very pale brown.		
								CALCARENITE, yellow brown, as before.		
PLEISTOCENE				40				CLAY & SILT, sandy, very pale brown		
								CALCARENITE, very pale brown to very pale grey, as before, with abundant flint. Fragments of off-white calarenite, 45+050 ft.		
				50						
								CALCILUTITE, off-white, bryozoal, shelly, abundant flint, probably only partially confining.		
				60						
TERTIARY								CALCARENITE, off-white, bryozoal abundant flint. Easy drilling to 75 ft, harder drilling after Good aquifer		
				70						
				80				Lumps of CALCILUTITE and large flint fragments		
				90				CALCILUTITE, pale grey, bryozoal, abundant flint.		
				100						

BRIDGEWATER FORMATION Unit A, Aquifer
GAMBIER LIMESTONE UNIT 1 Unit B, Aquifer

BORE LOG PERCUSSION ROTARY DRILLING

BORE No P3
SHEET. 2 OF 5

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 56/69

262000504

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED BRAY

SECTION 5

CO-ORDS: E

DRILLER W.H. JAMES

DOCKET No. 231/69

N

COMMENCED 25 JAN. '69 COMPLETED 1 MAR. '69

R.L. COLLAR (M.S.L.) 21.33

DEPTH 490 ft.

LOGGED BY B.M. HARRIS DATE ON SITE

R.L. SURFACE

20.87

CASING 60 ft of 8 in.

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No		
				110	TERTIARY			CALCILUTITE, as above	GAMBIER LIMESTONE Unit 1	Unit B, Aquifer
								Becoming grey		
				120				Some fragments of calcarenite		
				130				Content of fines decreasing		
								CALCILUTITE grading to CALCARENITE, pale grey		
				140				CALCILUTITE, pale grey, bryozoal, abundant flint. Content of fines decreasing.		
				150						
				160				CALCILUTITE as above grading to CALCARENITE, sity.		
				170				CALCILUTITE, pale grey bryozoal, abundant flint.		
								A few fragments of CALCARENITE		
				180				Content of fines decreasing		
				190				CALCARENITE, pale grey, bryozoal shelly some flint. Good aquifer		
				200						

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No P3
SHEET. 3 OF 5

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 56/69 262000504

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED BRAY

SECTION 5

CO-ORDS. E

DRILLER W.H. JAMES

DOCKET No. 231/69

N

COMMENCED 25 JAN '69 COMPLETED 1 MAR '69

R.L. COLLAR (M.S.L) 21.33

DEPTH 490 ft

LOGGED BY B.M. HARRIS DATE ON SITE

R.L. SURFACE

20.87

CASING 60ft. of 8 inch

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No		
				210				CALCARENITE, as above A few lumps of Calcilutite Content of fines increasing CALCARENITE, pale grey, very silty, grading to CALCILUTITE. CALCARENITE, off-white to pale grey, bryozoal, shelly. Some flint to 235 ft only Good aquifer A few lumps of glauconitic CALCILUTITE Hard drilling CALCARENITE, off-white to very pale green, bryozoal, glauconitic, hard drilling, a few small fragments of flint. Good aquifer CALCARENITE, white to off-white to very pale greenish white, bryozoal. Shelly hard drilling. Good aquifer. Becoming white from 295 ft.		
				220						
				230						
				240						
				250						
				260						
				270						
				280						
				290						
				300						

GAMBIER LIMESTONE Unit 1 Unit B Aquifer UNIT 2

BORE LOG PERCUSSION ~~ROCK~~ DRILLINGBORE No. P3
SHEET. 4. OF. 5

PURPOSE OF BORE . . . OBSERVATION

BORE SERIAL No. . 56/69 . . 262000504.

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED BRAY

SECTION . . . 5

CO-ORDS: E

DRILLER W.H. JAMES

DOCKET No. 231/69

N

COMMENCED 25 JAN '69 COMPLETED 1 MAR '69

R.L. COLLAR (M.S.L) 21.33

DEPTH 490 ft.

LOGGED BY B.M. HARRIS DATE ON SITE

R.L. SURFACE . . . 20.87

CASING 60 ft of 8 inch

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°			GAMBIER LIMESTONE Unit 2	Unit B Aquifer
			310					CALCARENITE as above				
			320					Lumps of CALILUTITE				
			330					CALCILUTITE, white, bryozoal				
								CALCARENITE, white, bryozoal, shelly, with a few lumps of CALCILUTITE				
			340					CALCILUTITE, grey to green grey, relatively unfossiliferous and glauconitic, & CALCARENITE, white & bryozoal				
			350					CALCARENITE, white, bryozoal, shelly and with a few very small chips of grey to black flint Hard bar.				
			360					A few lumps of pale greenishwhite glauconitic clay				
			370					CALCILUTITE, grey, glauconitic, & CALCARENITE, white bryozoal				
			380					CALCARENITE, off-white to very pale greenish white, bryozoal, shelly glauconitic				
			390									
			400									

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No P3
SHEET. 5. OF. 5

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 56/69 . 262000504

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED BRAY

SECTION 5

CO-ORDS: E

DRILLER W.H. JAMES

DOCKET No. 231/69

N

COMMENCED 25 JAN. '69 COMPLETED 1 MAR '69

R.L. COLLAR (M.S.L) 21.33

DEPTH 490 ft.

LOGGED BY B.M. HARRIS

DATE ON SITE

R.L. SURFACE

20.67

CASING 60ft. of 8 inch

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS		
				410				CALCARENITE, white & bryozoal with lumps of CALCILUTITE, glauconitic bryozoal very pale greenish grey. Very small fragments of dark green-brown flint.		
				420				CALCARENITE, white to pale grey, bryozoal with abundant grey and dark green-brown flint.		Aquifer Unit B
				430				CALCILUTITE, grey, bryozoal with grey and dark green-brown flint.		GAMBIER LIMESTONE, UNIT 3
				440				CALCILUTITE, as above with small fragments of white and grey CLACARENITE.		Confining beds
				450						UNIT C
				460						
				470						
				480				CALCILUTITE, grey to dark grey, bryozoal with small chips of grey and black flint.		UNIT 4
								Becoming pale grey		
				490				END OF HOLE 490 Ft.		
				500						

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION-ROTARY DRILLING

BORE No P4
SHEET. OF.

PURPOSE OF BORE. WATER

BORE SERIAL No. 60/69 Perm. No. 631017903

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED SMITH

SECTION ADJ. 179

DRILLER TUCKER

DOCKET No. 1939/68

CO-ORDS: E

COMMENCED 3.3.69 COMPLETED 4.3.69

R.L. COLLAR (M.S.L) 42.01

DEPTH 50 feet.

LOGGED BY B.M. HARRIS DATE ON SITE

R.L. SURFACE 41.87

CASING 44' 11" of 10 in.

WATER CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT			
	15	6							
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N° See also GEOPHYSICAL, POTENTIAL, SALINITY etc. logs.	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
44" of 10 inch casing slotted from 5 ft.	15'	6'	0		Pleistocene		CLAY, calcareous, sandy, brown.	GAMBIER LIMESTONE Unit 1	BRIDGEWATER FORMATION
			10				CALCARENITE; cream, small amount of silt-size quartz. Essentially coarse grained shell fragments. Some fragments of black flint. Content of bryozoal increases towards base. (AQUIFER)		
			20						
			30	Tertiary		CALCIRUDITE; mainly broken flint fragments, in a matrix of silt to sand size shell fragments, plus bryozoal. Cream colour.	Unit A		
			40			Unit B			
			50			End of hole 50 feet.			
			60						
			70						
			80						
			90						
			100						

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION - ROTARY DRILLING

BORE No P5
SHEET. 1. OF. 3.

PURPOSE OF BORE. OBSERVATION.

BORE SERIAL No. 458/69

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

PERM. NO. 631015201

HUNDRED SMITH.

SECTION 152.

CO-ORDS: E

DRILLER W.H. JAMES.

DOCKET No. 231/69

N

COMMENCED 12.5.69 COMPLETED 16.5.69

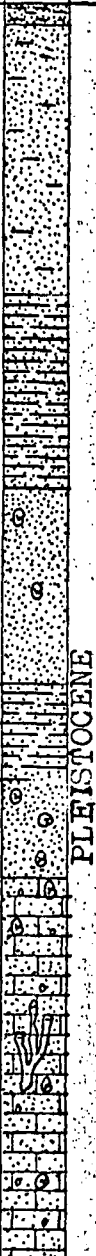
R.L. COLLAR (M.S.L) 79.720

DEPTH 300ft.

LOGGED BY B. HARRIS DATE JULY, 69

R.L. SURFACE 79.208

CASING 8' 6"

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	
25		11										
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No					
70ft. of 6 in. casing	26'	11"	10		PLEISTOCENE		TOPSOIL - SAND, fine grained, very silty organic black.				BRIDGEWATER FORMATION	
			SAND, - fine, silty, pale grey.									
			CLAY - grey green - brown, very sandy.									
			SAND - medium, grey green, subrounded to subangular, with 25% shell fragments.									
			CLAY - grey green, very sandy, some shell fragments.									
			SAND - medium-coarse grained, shelly, slightly bryozoal, some strongly cemented fragments.									
			SANDY CALCARENITE, shelly, slightly bryozoal, with flint.									
			CALCARENITE, grey, bryozoal, shelly, with grey & black flint.									
				TERTIARY						GAMBIER LIMESTONE, Unit 1	GAMBIER LIMESTONE AQUIFERS	

BORE LOG PERCUSSION-ROTARY DRILLING

BORE NO P5
SHEET. 2. OF. 3.

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 458/69

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

PERM.NO.631015201

HUNDRED SMITH

SECTION 152

CO-ORDS: E

DRILLER W.H. JAMES

DOCKET No. 231/69

N

COMMENCED 12 May 69 COMPLETED 16 May 69

R.L. COLLAR (M.S.L.) 79.720

DEPTH 300 ft.

LOGGED BY B. HARRIS DATE JULY 69

R.L. SURFACE 79.208

CASING 78ft. of 6in.

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	25	11				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
			110				Calcarenite, grey, bryozoal shelly with flint. Becoming pale grey. Flint less abundant.		
			120						
			130				Abundant black flint.		
			140						
			150						
			160				Flint absent.		
			170						
			180				Slightly glauconitic.		
			190						
			200						

DEPARTMENT OF MINES SOUTH AUSTRALIA
BORE LOG PERCUSSION-ROTARY DRILLING

BORE No 15
 SHEET 3 OF 3

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES

HUNDRED SMITH

DRILLER W.H. JAMES

COMMENCED 12 May 69 COMPLETED 16 May 69

LOGGED BY B. HARRIS DATE JULY 69

BORE SERIAL No 458/69

FEATURE TEST AREA No 1

SECTION 152

DOCKET No 231/69

R.L. COLLAR (M.S.L) 79.72

R.L. SURFACE 79.21

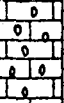
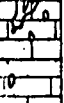
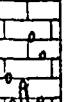
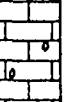
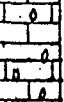
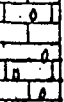
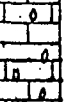
PERM. NO. 631015201

CO-ORDS: E

N

DEPTH 300ft.

CASING 78ft. of 6 in.

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No		
				210				CALCARENITE, grey, bryozoal, slightly glauconitic.	Unit 1	
				220				CALCARENITE, White, bryozoal, some lumps of white. CALCILUTITE, slightly glauconitic.	Unit 2	
				230				CALCILUTITE, white bryozoal, galuconitic some flint.		
				240				CALCARENITE, pale grey, bryozoal, abundant black & grey flint.		
				250						
				260						
				270						
				280						
				290						
				300				END OF HOLE 300 FT.		

TERTIARY

GAMBIER LIMESTONE
 GAMBIER LIMESTONE AQUIFERS

DEPARTMENT OF MINES - SOUTH AUSTRALIA
BORE LOG PERCUSSION - ROTARY DRILLING

BORE No P.6
SHEET. 1 OF 2

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 455/69 PERM. NO. 450001 705

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED LAKE GEORGE

SECTION 17M

CO-ORDS E

DRILLER W.H. JAMES

DOCKET No. DM. 231/69

N

COMMENCED 6.5.1969

COMPLETED 8.5.1969

R.L. COLLAR (M.S.L.) 6.384

DEPTH 120ft.

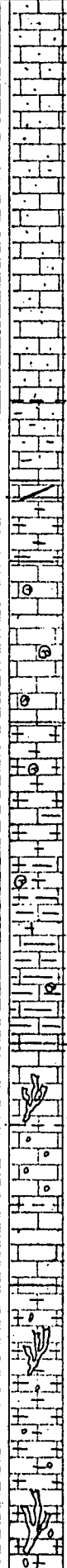
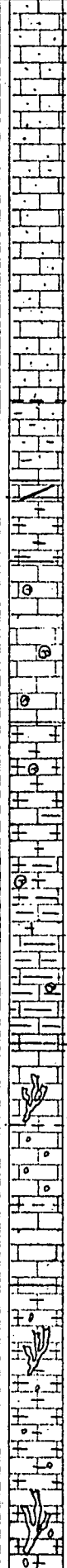
LOGGED BY B. HARRIS

DATE JULY, 1969

R.L. SURFACE

5.926

CASING 52ft. of 6 in.

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT	
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°				FORMATION	GEOHYDRAULIC
52ft. of 6 inch												
			10		PLEISTOCENE	<u>CALCARENITE</u> , off-white to pale yellow-brown unconsolidated shell fragments, sandy.				Unit A		
			20			Becoming silty and fine grained						
			30			<u>CALCIRUDITE</u> , unconsolidated, complete shells.						
			35			<u>CALCISILTITE</u> , pale grey-off-white, shelly.						
			40			<u>CALCARENITE</u> , off-white-pale grey, shelly, weakly to strongly cemented						
			50			<u>CALCISILTITE</u> , grading to <u>CALCILUTITE</u> , pale grey, shelly						
			60									
			70			<u>CALCARENITE</u> , Pale grey, bryozoal						
			75			Off-white, with flint						
			80			Very pale grey to off-white						
			85		TERTIARY	<u>CALCISILTITE</u> , pale grey, bryozoal, with flint				Unit B		
			90									
			95									
			100									

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No P.6
SHEET. 2 OF 2

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 455/69 PERM. NO. 450004705

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED LAKE GEORGE

SECTION 17^M

DRILLER W.H. J AMES

DOCKET No. D.M. 231/69

CO-ORDS: E

COMMENCED 6.5.1969 COMPLETED 8.5.1969

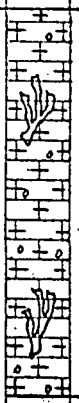
R.L. COLLAR (M.S.L.) 6.384

DEPTH 120ft.

LOGGED BY B. HARRIS DATE JULY, 1969

R.L. SURFACE 5.926

CASING 52ft. of 6 ins.

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS		
				110			TERTIARY	REMARKS SEE DRAWING N°	GAMBER LIMESTONE Unit A	GEOHYDRAULIC Unit B
				120				END OF HOLE 120ft.		
				130						
				140						
				150						
				160						
				170						
				180						
				190						
				200						

CASING

CASING 6 inch

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING NO.	
					PLEISTOCENE		Sand, Silty, Shelly CALCIRUDITE, unconsolidated shell fragments	BRIDGEWATER FORMATION
			10					
			20				CALCARENITE, shelly, pale yellow brown CALCIRUDITE, unconsolidated shell fragments	GEOHYDRAULIC UNIT A
			30				Becoming bryozoal	
			40				CALCARENITE, coarse bryozoal, shelly, off white.	
			50					
			60					
			70		TERTIARY		CALCARENITE, fine to medium, bryozoal, off white.	GAMBIER LIMESTONE Unit 1
			80				CALCARENITE, coarse bryozoal, shelly, off white.	GEOHYDRAULIC UNIT B
			90				CALCILUTITE, bryozoal, pale grey.	Aquifer

BORE LOG PERCUSSION - ROTARY DRILLING

BORE No P7
SHEET. 2 OF. 2

PURPOSE OF BORE. OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED

DRILLER W.H. JAMES

COMMENCED 9.5.69 COMPLETED 12.5.69

LOGGED BY B. HARRIS DATE MAY. 69

BORE SERIAL No. 146/69 687031601

FEATURE TEST AREA No 1

SECTION 3.16

DOCKET No. 231/69

R.L. COLLAR (M.S.L) -3.72

R.L. SURFACE -3.92

CO-ORDS: E

N

DEPTH 140ft.

CASING

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED			LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	
			110					CALCILUTITE, bryzoal, pale grey flint 100 to 105 ft.	
			120					CALCARENITE, bryzoal, off white, Flint present.	
			130						
			140					END OF HOLE	
			50						
			60						
			70						
			80						
			90						
			100						

BORE LOG PERCUSSION-ROTARY DRILLING

BORE N^o P8
SHEET 1. OF 2.

PURPOSE OF BORE OBSERVATION

BORE SERIAL No 461/69 Perm No. 687000301

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED WATERHOUSEFEATURE TEST AREA N^o1

DRILLER W.H.JAMES

SECTION 3

COORDS: E

COMMENCED 16.5.69 COMPLETED 20.5.69

DOCKET No 231/69

N

R.L. COLLAR (M.S.L.) -1.97

DEPTH 120 ft.

LOGGED BY B.HARRIS

DATE JULY, 69.

R.L. SURFACE -2.81

CASING 25.6 ft of 6"

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
5		3'-6"					

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N ^o TEST AREA 1 see also GEOPHYSICAL, SALINITY, POTENTIAL etc. logs	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
25ft 7 ins of 6" Casing						PLEISTOCENE		TOPSOIL - SAND, fine grained, silty, organic, black	BRIDGEWATER FM.	AQUIFER A
							CALCARENITE, unconsolidated shell fragments grading to CALCIRUDITE, unconsolidated whole shell fragments.			
							CALCARENITE, pale grey, bryozoal, shelly, pale grey.			
						TERTIARY		CALCARENITE, off white, mainly coarse bryozoal shelly at top.	GAMBIER LIMESTONE Unit 1	UNIT B AQUIFER B
							Grading to CALCIRUDITE 35-45 Ft.			
							CALCARENITE, grey, bryozoal			

BORE LOG PERCUSSION-ROTARY DRILLING

BORE NO P8.
SHEET 2 OF 2.

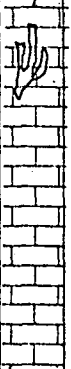
PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED WATERHOUSE
DRILLER W.H.JAMES
COMMENCED 16.5.69
LOGGED BY B.HARRIS

COMPLETED 20.5.69
DATE JULY, 69

BORE SERIAL No. 461/69
FEATURE TEST AREA N°1
SECTION 3
DOCKET No. 231/69
R.L. COLLAR (M.S.L.)
R.L. SURFACE

CO-ORDS: E
N
DEPTH 120 ft.
CASING 25.7" of 6"

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS		
				110				REMARKS SEE DRAWING N°	GAMBIER LIMESTONE Unit 1	AQUIFER B
				120				<u>CALCARENITE</u> , grey, bryozoa		
				130				END OF HOLE 120 ft.		
				140						
				150						
				160						
				170						
				180						
				190						
				200						

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No A.1
SHEET 1 OF 1

PURPOSE OF BORE: OBSERVATION

BORE SERIAL No. 1065/69 Perm No. 450001701

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED LAKE GEORGE

SECTION 17

DRILLER R. FEEBY

DOCKET No. 231/69

COMMENCED April 1969 COMPLETED April 1969

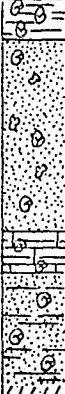
R.L. COLLAR (M.S.L) -3.30

DEPTH 20ft.

LOGGED BY J. BRADFORD DATE ON SITE

R.L. SURFACE -5.25

CASING 13ft. of 5in. PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT				
	4ft.	2' 6"								
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
13ft. of 1.5" P.V.C.	4'	2' 6"			PLEISTOCENE			SHELLGRIT, and whole shells - silty grey sludge	BRIDGEWATER	UNIT A
			SAND, and shell fragments, grey strong H ₂ S smell throughout							
			CALCILUTITE, shelly green, clayey							
			SAND, with clay lenses and shell fragments							
			10							
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

Perm No. 450001702

SECTION 17

DOCKET, No. 231/69.

CO-ORDS : E

R.L. COLLAR (M.S.L) 3.24

DEPTH 20ft.

R.L. SURFACE 1.28

CASING 18ft. of 1.5in.P.VC

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED					
		7'	5'9"							
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING NO.	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
18 ft. of 1.5" P.V.C.		7' 5'9"				PLEISTOCENE		SAND, fine grained, silty, dark brown, organic CALCARENITE, grey-uncemented slightly shelly	BRIDGEWATER FMN.	UNIT A

BORE LOG PERCUSSION-ROTARY DRILLING

BORE N° A.3.
SHEET. 1. OF. 1

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 1065/69

Perm No. 450001704

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED LAKE GEORGE

SECTION 17

CO-ORDS: E

DRILLER R. FEEHY

DOCKET No. 231/69

N

COMMENCED April 1969

COMPLETED April 1969

R.L. COLLAR (M.S.L) 7.78

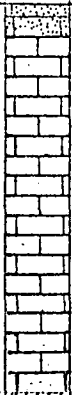
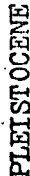
DEPTH 20ft.

LOGGED BY J. BRADFORD

DATE ON SITE

R.L. SURFACE 5.83

CASING 18ft. of 1.5in.P.V.C

WATER CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	8ft.		7.5ft.							
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°		
18ft. of 1.5" P.V.C.		8.75	10					SAND, fine grained, silty, black, organic	BRIDGEWATER FMN.	UNIT A
			CALCARENITE, light brown-uncemented							
			Turning grey							
			NO SAMPLE 14-18ft.							
			20					Grey uncemented calcarenite		
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			00							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No. A.4
SHEET. 1. OF. 1.

PURPOSE OF BORE. OBSERVATION

BORE SERIAL No. 1965/69

Perm No. 450001704

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No. 1

HUNDRED LAKE GEORGE

SECTION 17

CO-ORDS: E

DRILLER E. MURPHY

DOCKET No. 231/69

N

COMMENCED April 1969 COMPLETED April 1969

R.L. COLLAR (M.S.L.) 7.78

DEPTH 20ft.

LOGGED BY J. BRADFORD DATE ON SITE

R.L. SURFACE 7.89

CASING 18ft. of 1.5in. PVC.

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOLYDRAULIC UNIT
	8ft.	6.4ft.				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No.	LITHOLOGIC UNIT	GEOLYDRAULIC UNIT
						PLEISTOCENE		SAND, fine-grained, black, silty, organic CALCARENITE, dark grey-brown-uncemented Light grey-brown Light grey-minute shell fragments Medium grey Dark grey still uncemented. shell fragments	BRIDGEWATER FMN.	UNIT A
			10							
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No A.5
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED LAKE GEORGE

DRILLER R. FREEY

COMMENCED April '69 COMPLETED April '69

LOGGED BY J. BRADFORD DATE ON SITE

BORE SERIAL No. 1065/69

Perm No. 450002401

FEATURE TEST AREA No 1

SECTION 24

CO-ORDS: E

DOCKET No. 231/69

N

R.L. COLLAR (M.S.L) 40.74

DEPTH 20ft.

R.L. SURFACE 38.74

CASING 20ft. of 1.5in.FVC

WATER CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	7ft.		5.11ft.							
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°		BRIDGEWATER FBN.	UNIT A
							HUMUS, dark brown and sandy			
							CALCARENITE, light brown with clay lenses			
			10				Light Brown			
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

450002503

R.L. SURFACE 37.48

DEPTH 20ft.
CASING 20ft. of 1.5in P.VC

[illegible]

BORE SERIAL No. 1065/69 450002502

FEATURE TEST AREA N°1

SECTION . . . 25

DOCKET No. . 231/69

R.L. COLLAR (M.S.L) 38.13

DATE . 17.4.69

R.L. COLLAR (M.S.L) 38.13. DEPTH

R.L. SURFACE . 36.13

DEPTH 20' FVC

LOGGED BY J. DODSON DATE 17.4.69 R.L. SURFACE 36.13 CASING 20ft. of 1.5in.

[illegible]

CALCARENITE Light brown -
Firmly cemented.

20ft. of 1.5" p.v.c.

8'

5

10

-20

30

40

50

60

70

50

1

PLEISTOCENE

~~GROUNDWATER FIRM~~

UNIT A

BORE LOG PERCUSSION-ROTARY DRILLING

BORE NO A8
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED LAKE GEORGE

DRILLER R. FEEBY

COMMENCED APRIL 69 COMPLETED APRIL 69

LOGGED BY J. DODSON

DATE On site

BORE SERIAL No. 1065 /69

FEATURE TEST AREA No 1

SECTION 25

DOCKET No. 231/69

R.L. COLLAR (M.S.L) 36.92

R.L. SURFACE 34.65

PERM. NO. 450002501

COORDS: E

N

DEPTH 20ft.

CASING 20ft. of 1.5in PUC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	REMARKS SEE DRAWING No.	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	4'	4'6"					
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS
20ft. of 1.5" P.V.C.	4'	4'6"				PLEISTOCENE	
			10				
			20				
			30				
			40				
			50				
			60				
			70				
			80				
			90				
			100				

SAND: Fine Grained, silty, dark brown organic

CALCARENITE: - Reddish brown - uncemented

Light brown - strongly cemented.

BRIDGEWATER FMN. UNIT A

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No A9
SHEET OF

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1065/69

262011201

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED BRAY

SECTION 112

CO-ORDS: E

DRILLER R. FEEBY

DOCKET No. 231/69

N

COMMENCED April 69 COMPLETED April 69

R.L. COLLAR (M.S.L) 32.22

DEPTH 20'

LOGGED BY J. DODSON

DATE On site

R.L. SURFACE 30.18

CASING 18ft. of 1.5in PUC

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	10'		4'6"							
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	BRIDGEWATER FEN UNIT A	
1021 of 1.5" P.V.C.		4'6"				PLEISTOCENE		HUMUS:- Dark Grey sand. SAND:- Dark grey with calcarenite rocks. CLAY:- Dark grey CALCARENITE:- Brown with clay lenses CALCILUTITE:- Sandy-shelly-slightly green with large whole oyster shells and shell fragments.		
			10							
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			00							

BORE NO A10.
SHEET OF

PURPOSE OF BORE OBSERVATION

BORE SERIAL No.

1065/69 Plan No. 262000601

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED . . . BRAY

SECTION

CO-ORDS : E

DRILLER . . . R. FEEBY

DOCKET No.

231/68

COMMENCED April 1968 COMPLETED

April 196

R.L. COLLAR (M.S.L) 112.93

DEPTH 80 ft.

LOGGED BY J. DODSON.

DATE _____

ON SITE

R.L. SURFACE

111.13

CASING 80ft of 1.5 in.

[illegible]

BORE SERIAL No. 1065/69 262000506

FEATURE TEST AREA N°1

SECTION

DOCKET No. 231/69

CO-ORDS : E

COMMENCED April 69 COMPLETED April 69

R.L. COLLAR (M.S.L) 25.78

DEPTH 35 ft

LOGGED BY J. BRADFORD DATE

R.L. SURFACE 23.84

CASING 35ft of 1.5 in

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	C UNIT	CULIC UNIT
	26'	21'				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS - SEE DRAWING N°	LITHOLOGY	GEOHYDRA
35 ft of 5 p.v.c.		26'	21'		PLEISTOCENE		<u>HUMUS+</u> Very dark and sandy <u>CALCARENITE:</u> Light brown aeolianite grading to .5 millimeter Slightly Darker	BRIDGEWATER FORMATION	UNIT A, AQUIFER

BORE LOG PERCUSSION ROTARY DRILLING

BORE No A12
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 10657/69 262000103

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY

FEATURE TEST AREA No 1
SECTION 1

DRILLER E. MURPHY

DOCKET No 231/69

COMMENCED April 69 COMPLETED April 69

R.L. COLLAR (M.S.L) -2.60

LOGGED BY J. DODSON DATE ON SITE

R.L. SURFACE -3.98

CO-ORDS: E

DEPTH 20'

CASING 18ft of 1.5in PW

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	8'		2' 7"							
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	BRIDGEWATER FIN	UNIT A
18ft. of 1.5" p.v.c.	8'	2' 7"	0			PLEISTOCENE		<u>CALCARENITE</u> :- Sandy with shell fragments and whole shelly, dark grey with lenses of calcilutite throughout		
			10							
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No A13
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1065/69

262000303

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED BRAY

SECTION 3

CO-ORDS: E

DRILLER R. FEEBY

DOCKET No. 231/69

N

COMMENCED April 69 COMPLETED April 69

R.L. COLLAR (M.S.L)

DEPTH 10'

LOGGED BY J. DODSON

DATE

SITE

R.L. SURFACE

CASING 10ft of 1.5 in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED
	1'6"	1'		

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
10ft. of 1.5" P.V.C.	1'6"		10			PLEISTOCENE		CALCARENITE:- Light grey - shelly and strongly cemented. Lenses of Calcisiltite and calcilutite-clay.	BRIDGEWATER	UNIT A
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No A14
SHEET 6 of 1

PURPOSE OF BORE OBSERVATION
PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY
DRILLER R. FEEBY
COMMENCED April, 1969
LOGGED BY J. DODSON

BORE SERIAL No 1065/69 Perm No. 262008002
FEATURE TEST AREA No 1
SECTION 80
DOCKET No. 231/69
R.L. COLLAR (M.S.L.) -
R.L. SURFACE -
CO-ORDS: E N
DEPTH 20'
CASING 20ft of 1.5in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	2'	6"				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
20ft of 1.5" P.V.C.	2'	6"	0			PLEISTOCENE		HUMUS:- Black & Sandy.	BRIDGEWATER FMN UNIT A.	
								CALCARENITE:- Calcreted Shells.		
								CALCISILTITE:- Light brown.		
			10					CALCARENITE:- Light brown and strongly cemented.		
								CALCRETE:- Hard. Off white.		
			20					Strongly cemented with CALCARENITE:- lenses of light green calcilutite and calcisiltite.		
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

BORE LOG PERCUSSION ROTARY DRILLING

BORE NO A15

SHEET OF

PURPOSE OF BORE OBSERVATION

BORE SERIAL No.

1065/69 Perm No. 450002701

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED LAKE GEORGE

SECTION 17

CO-ORDS: E

DRILLER R.FEEBY

DOCKET No. 231/69

N

COMMENCED April, 1969 COMPLETED April, 1969

R.L. COLLAR (M.S.L.) -3.39

DEPTH 20'

LOGGED BY J. BRADFORD

DATE ON SITE

R.L. SURFACE

-5.34

CASING 20ft of 1.5in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED
	8'	2'6"		

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	LITHOLOGIC UNIT	GEOLYDRAULIC UNIT
20ft of 1.5" PVC CASING		2'6"					HUMUS:- Dark grey - very sandy		
							CALCARENITE:- With whole shell fragments - yellow brown, with lenses of silt - H ² S Smell		
			10						
			20						
			30						
			40						
			50						
			60						
			70						
			80						
			90						
			0						

PLEISTOCENE

BRIDGEWATER FAN

UNIT A

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No. A16
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1065/69 450002703

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No. 1

HUNDRED L. GEORGE

SECTION 27

CO-ORDS: E

DRILLER R. FEEBY

DOCKET No. 231/69

N

COMMENCED April 69 COMPLETED April

R.L. COLLAR (M.S.L) 0.99

DEPTH 20 ft

LOGGED BY J. DODSON

DATE ON SITE

R.L. SURFACE -0.99

CASING 20ft of 1.5in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	14'	6'4"				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No.	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
20ft of 1.5 PVC		6'4"	10			PLEISTOCENE		CALCARENITE:- Aeolianite light brown - uncemented with shell fragments, grains up to 0.5mm. Lenses of Light green - gray calcilutite H ² S Smell	BRIDGEWATER F.M.N. UNIT A	
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

BORE LOG PERCUSSION - ROTARY DRILLING

BORE N^o 417
SHEET 1. OF 1.

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED LAKE GEORGE

DRILLER R. FEEBY

COMMENCED April 69 COMPLETED April 69

LOGGED BY J. DODSON DATE ONSITE

BORE SERIAL No. 1065/69 450002703

FEATURE TEST AREA N^o 1

SECTION 27

CO-ORDS: E

DOCKET No. 231/69

N

R.L. COLLAR (M.S.L) 5.50

DEPTH 20'

R.L. SURFACE 3.49

CASING 20ft of 1.5in PVC

WATERS CUT		DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED					
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°				LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
20' of 1.5" P.V.C. casing		5.4'	0			PLEISTOCENE		CALCARENITE:- Light brown uncemented with shell fragments. Grey Aeolianite .5mm.				BRIDGEWATER F.M.N.	UNIT A
			10										
			20										
			30										
			40										
			50										
			60										
			70										
			80										
			90										
			100										

BORE SERIAL No. .1065/69. PermNo. 450002801

FEATURE TEST AREA N°1

SECTION 28

DOCKET No. 231/69

R.L. COLLAR (M.S.L.) 9.44

R.L. SURFACE . 2.67

DEPTH 20 ft.

CASING 18ft. of 1.5in.

[illegible]

BORE LOG PERCUSSION ROTARY DRILLING

BORE No A19.
SHEET. 1 OF 1.

BORE SERIAL No. 1065 '69 Perm No. 643019501

FEATURE TEST AREA N°1

SECTION 195

DOCKET No. 231/69

R.L. COLLAR (M.S.L.) 45.55

R.L. SURFACE

DEPTH 20 ft.
1 ft. of 1.5 in.
CASING P.V.C.

[illegible]

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No 120
SHEET 1 OF 1

PURPOSE OF BORE: OBSERVATION

BORE SERIAL No: 1065/69 643007401

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

HUNDRED SYMON

SECTION 74

DRILLER R. FEEBY

DOCKET No. 231/69

CCAMMENCED April 69 COMPLETED April 69

R.L. COLLAR (M.S.L) 49.54

LOGGED BY J. DODSON DATE ON SITE

R.L. SURFACE 47.82

CO-ORDS: E

DEPTH 20ft. of 1.5in. N
CASING 19ft. of 1.5in. PVC.

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
19ft. of 1.5" P.V.C.	16'		10		PLEISTOCENE		CALCARENITE, dark brown - uncemented.	BRIDGEWATER FMN	UNIT A
			20				Strongly cemented - light brown		
			30						
			40						
			50						
			60						
			70						
			80						
			90						
			100						

CASING 20ft of 1.5in PVC

[illegible]

PERM.NO.643011401

CO-ORDS : E

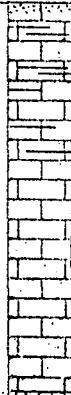
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DEPTH 20 ft.

R.L. SURFACE

DATE . ON SITE

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED
	12.0	11'8"		

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING NO.	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
20ft. of 1-6 in. P.V.C.		2' 11"	10		PLEISTOCENE		SAND: Fine grained, dark brown, silty, organic. CALCARENITE: Grey - uncemented. Lenses of dark brown calcareous clay. CALCARENITE: Off white - strongly cemented. Lenses of grey clacareous clay. Light brown - weakly cemented. Strongly cemented.	BRIDGEWATER FMN.	UNIT A

CASING 20ft of 1.5in PVC

TRIA LINE

BORE LOG PERCUSSION · ROTARY DRILLING

BORE No A24.
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED SMITH
DRILLER R. FEEBY

BORE SERIAL No. 1065/69 PERM. NO. 631003501

FEATURE TEST AREA No 1

SECTION 35

CO-ORDS: E

DOCKET No.

231/69

N

COMMENCED APRIL 1969 COMPLETED APRIL 1969

R.L. COLLAR (M.S.L.)

60.59

DEPTH

20 ft.

LOGGED BY J. DODSON

DATE ON SITE

R.L. SURFACE

58.58

CASING

20ft of 1.5 in

PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOMORPHIC UNIT
	9'	5'8"				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No	LITHOLOGIC UNIT	GEOMORPHIC UNIT
20ft of 1.5" PVC					PLEISTOCENE		HUMUS: Dark & sandy		
			10				CALCARENITE: Uncemented, grey-brown. with lenses of brown calcareous clay.		
			20				CALCARENITE: Pale yellow brown, strongly cemented.		
			30						
			40						
			50						
			60						
			70						
			80						
			90						
			100						

BRIDGEWATER FEN.

UNIT A

TRIM LINE

BORE SERIAL No. 1065/69

FEATURE TEST AREA No. 1
SECTION 35
DOCKET No. 231/69

CO-ORDS : E

R.L. COLLAR (M.S.L) 65.95

DATE on site

R.L. SURFACE 64.02

DEPTH 20 ft.
CASING 18ft of 1.5in PVC

TRIM LINE

BORE SERIAL No. 1065/69

FEATURE TEST AREA, No 1

PERM. NO. 631003701

SECTION 37

CO-ORDS: E

DOCKET No. 231/69

N

R.L. COLLAR (M.S.L.) 72.42

DEPTH 20 ft

R.L. SURFACE 70.50

CASING 20ft of 1.5in PVC

WATERS CUT		DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
		8'	7'6"					
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°
						PLISTOCENE		SAND: Fine grained, silty, brown, organic <u>CALCARENITE: Brown uncemented.</u> grey greyish yellow
								BRIDGEWATER FIN. UNIT A

BORE LOG PERCUSSION · ROTARY DRILLING

BORE N^o A27.
SHEET 1 OF 1.

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1065/69 631010801

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N^o1

HUNDRED SMITH

SECTION 108

CO-ORDS: E

DRILLER R.FEEBY

DOCKET No. 231/69

N

COMMENCED April 69 COMPLETED April 69

R.L. COLLAR (M.S.L) 33.30

DEPTH 20 ft

LOGGED BY U.DODSON DATE ON SITE

R.L. SURFACE 31.69

CASING 18ft of 1.5in PW

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
	4'6"	3'10"				

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N ^o	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
18ft of 1.5" P.V.C.						PLEISTOCENE		SAND: Fine grained, silty, black, organic CALCARENITE: Uncemented, dark grey, with pebbles of lighter grey limestone. Light grey with lenses of grey calcareous clay.	BRIDGEWATER FMN	UNIT A
			10							
			20							
			30							
			40							
			50							
			60							
			70							

			80							
			90							
			00							

BORE LOG PERCUSSION · ROTARY DRILLING

BORE N^o A28
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

BORE SERIAL N^o 1065/69 262014301

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY

FEATURE TEST AREA N^o 1

DRILLER R.FEEBY

SECTION 143

CO-ORDS: E

COMMENCED April 69 COMPLETED April 69

DOCKET N^o 231/69

N

DEPTH 20 ft.

LOGGED BY J.DODSON DATE ON SITE

R.L. COLLAR (M.S.L)

CASING 20ft of 1.5in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED
	7'	5'10"		

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N ^o	LITHOLOGIC UNIT	GEOLYDRAULIC UNIT
20ft of 1.5in P.V.C.	1'	5'10"	10		PLEISTOCENE		<u>SAND</u>: Fine grained, silty, black, organic <u>CALCARENITE</u>: Strongly cemented light grey Lenses of grey calcareous clay. <u>CALCARENITE</u>: light grey - cemented	BRIDGEWATER FEN	UNIT A
			20						
			30						
			40						
			50						
			60						
			70						
			80						
			90						
			100						

BORE LOG PERCUSSION ROTARY DRILLING

BORE NO A29
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION
PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY
DRILLER R.FEEBY
COMMENCED APRIL 69 COMPLETED APRIL 69
LOGGED BY J.DODSON DATE ONSITE

BORE SERIAL No. 1065/69
FEATURE TEST AREA N°1
SECTION 135
DOCKET No. 231/69
R.L. COLLAR (M.S.L) 34.11
R.L. SURFACE 32.24
PERM.NO.262013502
CO-ORDS E N
DEPTH 25 ft
CASING 25ft of 1.5in PVC

WATERS CUT	DEPTH IN FEET	WATER LEVEL	SUPPLY GALLONS PER HOUR	HOW TESTED
	15'	13'6"		

CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING N°	LITHOLOGIC UNIT	GEOHYDRAULIC UNIT
25ft. of 1.5" P.V.C. casing		13'6"	15'			PLEISTOCENE		SAND: Fine grained, silty dark brown, organic CALCARENITE: Uncemented, grey. CLAY: Grey calcareous. CALCARENITE: Strongly cemented light brown with light grey clay lenses.	BRIDGEWATER FMN.	UNIT A
			10							
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

BORE SERIAL No. 462/69
FEATURE TEST AREA N°1 PERM. NO. 262000507
SECTION 5 CO-ORDS: E
DOCKET No. 231/69 N
R.L. COLLAR (M.S.L) 116.57 DEPTH 125ft
R.L. SURFACE 115.92 CASING

TRIM LINE

BORE N^o A31
SHEET. 2 OF 2

[illegible]

BORE SERIAL No. 462/69

PERM.NO.262000507

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA N°1

HUNDRED . . . BRAY

SECTION 5

CO-ORDS : E

DRILLER R. FEEBY

DOCKET No. 231/69

4

COMMMENCED APRIL 69 COMPLETED APRIL 69

R.L. COLLAR (M.S.L.) 116.57

DEPTH : 125 ft

LOGGED BY J. DODSON.

DATE . ON SITE

R.L. SURFACE 115.92

CASING

[illegible]

BORE LOG PERCUSSION - ROTARY DRILLING

BORE No. A32
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

PROJECT SOUTH EAST WATER RESOURCES
HUNDRED BRAY

DRILLER W.H. JAMES

COMMENCED MAY 69 COMPLETED MAY 69

LOGGED BY J. DODSON

DATE

MAY 69

24.5.69

BORE SERIAL No. 465/69

FEATURE TEST AREA No. 1

SECTION 7

DOCKET No. 231/69

R.L. COLLAR (M.S.L.) -

O.R.L. SURFACE 25.63

PERM. NO. 262000704

CO-ORDS: E

N

DEPTH 20'

CASING 20ft of 1.5 in PVC

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOLYDRAULIC UNIT
	5'	4'6"								
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No.		
20ft. of 1.5" P.V.C.						PLEISTOCENE		<u>HUMUS</u> :- Very dark and andy <u>CALCARENITE</u> :-White, strongly cemented <u>SAND</u> + Grey and shelly As above but with lenses of light grey clay and white calcisiltite Abundant shell fragments and limestone rock chips.	BRIDGEWATER FMN.	UNIT A
			10							
			20							
			30							
			40							
			50							
			60							
			70							
			80							
			90							
			100							

BORE LOG PERCUSSION-ROTARY DRILLING

BORE No A 36
SHEET 1 OF 1

PURPOSE OF BORE OBSERVATION

BORE SERIAL No. 1065/69.

STATE NO. 631017904

PROJECT SOUTH EAST WATER RESOURCES

FEATURE TEST AREA No 1

CO-ORDS: E

HUNDRED SMITH

SECTION 179

N

DRILLER R. FEBEY

DOCKET No. 231/69

DEPTH 40ft.

COMMENCED 28.3.69 COMPLETED 28.5.69

R.L. COLLAR (M.S.L.)

LOGGED BY M. FREEMAN

DATE 10.11.69

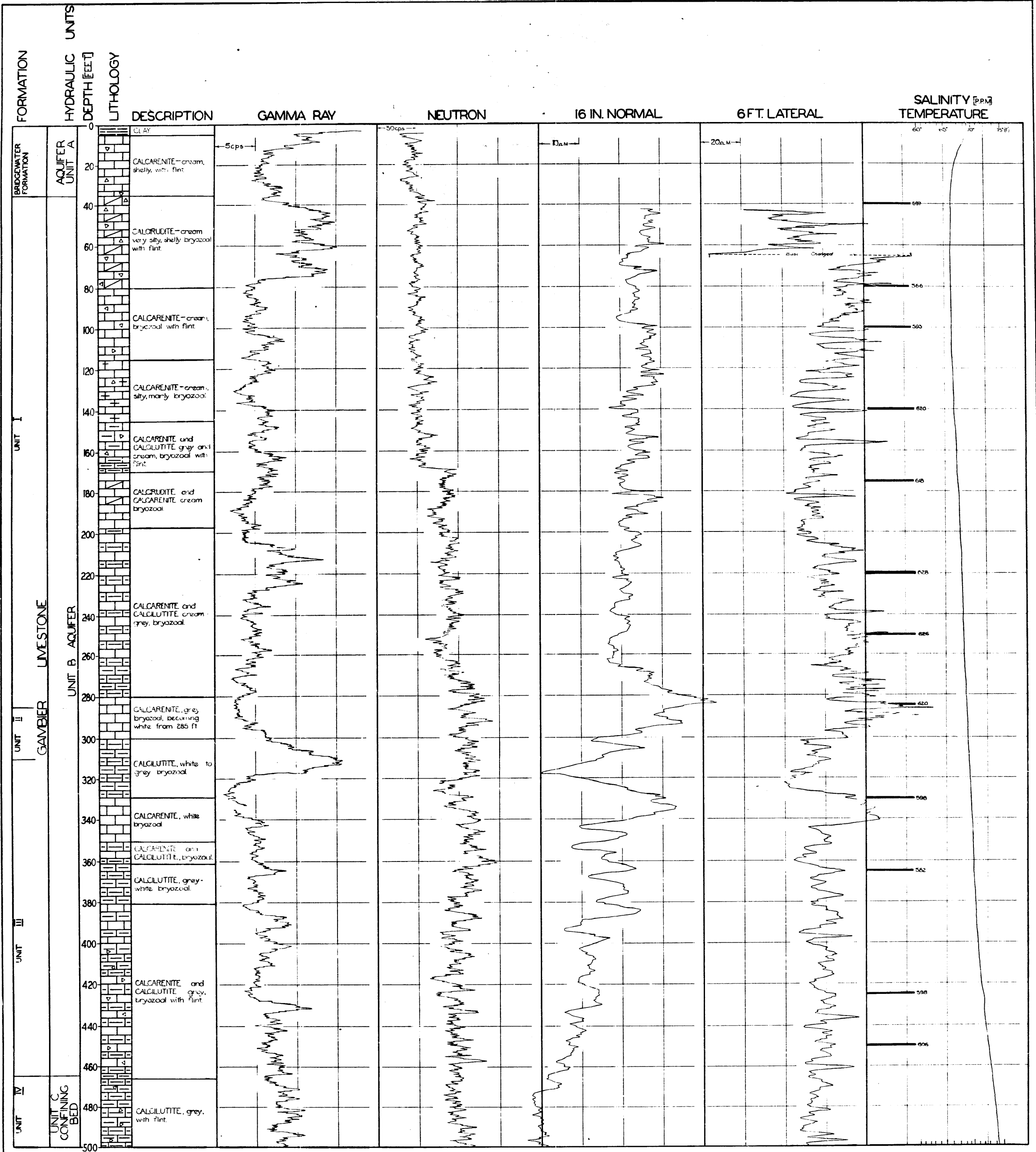
R.L. SURFACE

CASING 30ft. of 1 1/2" P.V.C.

WATERS CUT	DEPTH IN FEET		WATER LEVEL		SUPPLY GALLONS PER HOUR		HOW TESTED		LITHOLOGIC UNIT	GEOHYDRAULIC U	SALINITY, ANALYSIS TYPE, & NUMBER	
CASING	WATER CUT	WATER LEVEL	DEPTH IN FEET	CORE	GRAPHIC LOG	AGE	DRILLING REMARKS	REMARKS SEE DRAWING No Note this bore was originally drilled as A.1.				
								Drillers Log Only				
30ft. of 1 1/2" P.V.C.	5' 5'		10					CLAY: - Grey				
								CALCARENITE				
			20									
			30									
			40									
			50									
			60									
			70									
			80									
			90									
			100									

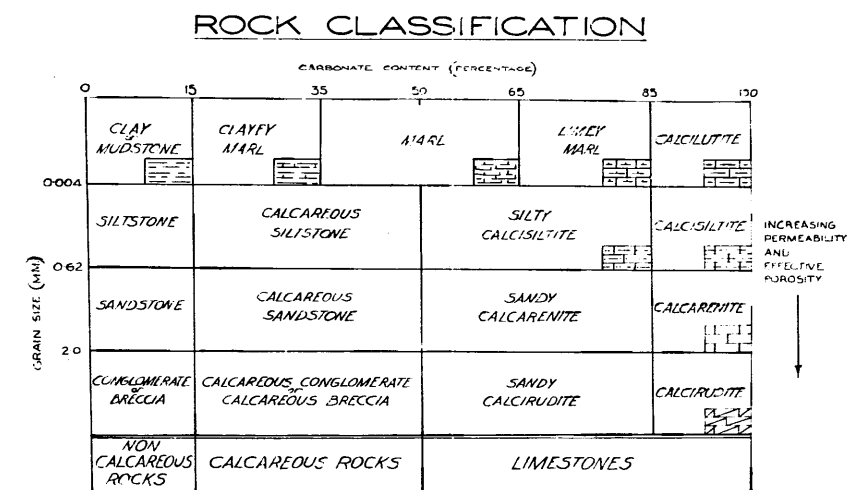
FOR APPENDIX B ENCLOSURES

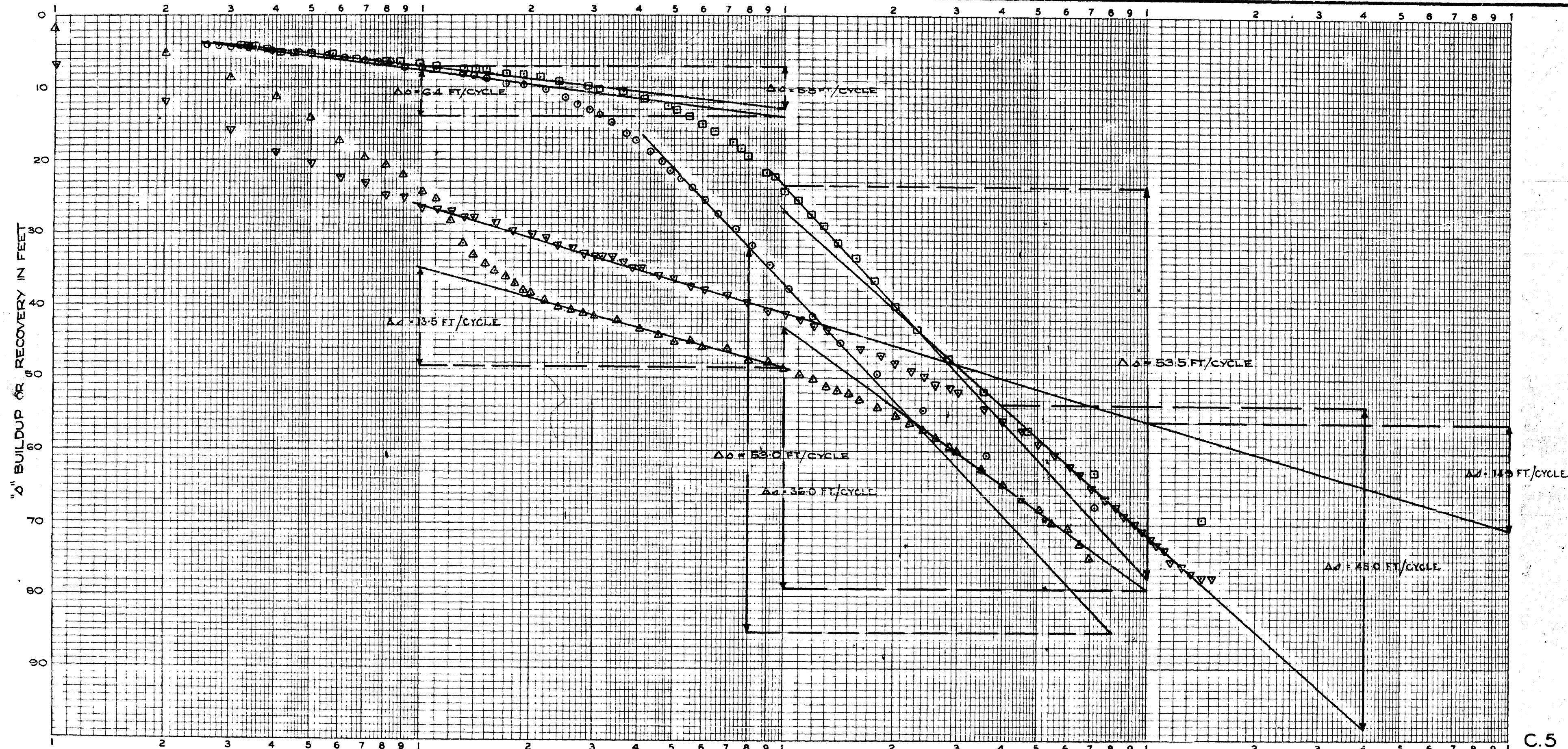
SEE SEPARATE FOLDER



DEPARTMENT OF MINES - SOUTH AUSTRALIA
SOUTH EAST WATER RESOURCES
TEST AREA 1
GEOLOGICAL LOGS
HOLE NR PL 1, RL
331000000
DATE AS SHOWN
63-483/6
7th JULY 1963
Director of Mines SEN. GEOLOGIST

FIG. NO. B.1.
EQUIPMENT USED : FALLING LOGMASTER
OPERATOR : B. P. TAYLOR





C.5

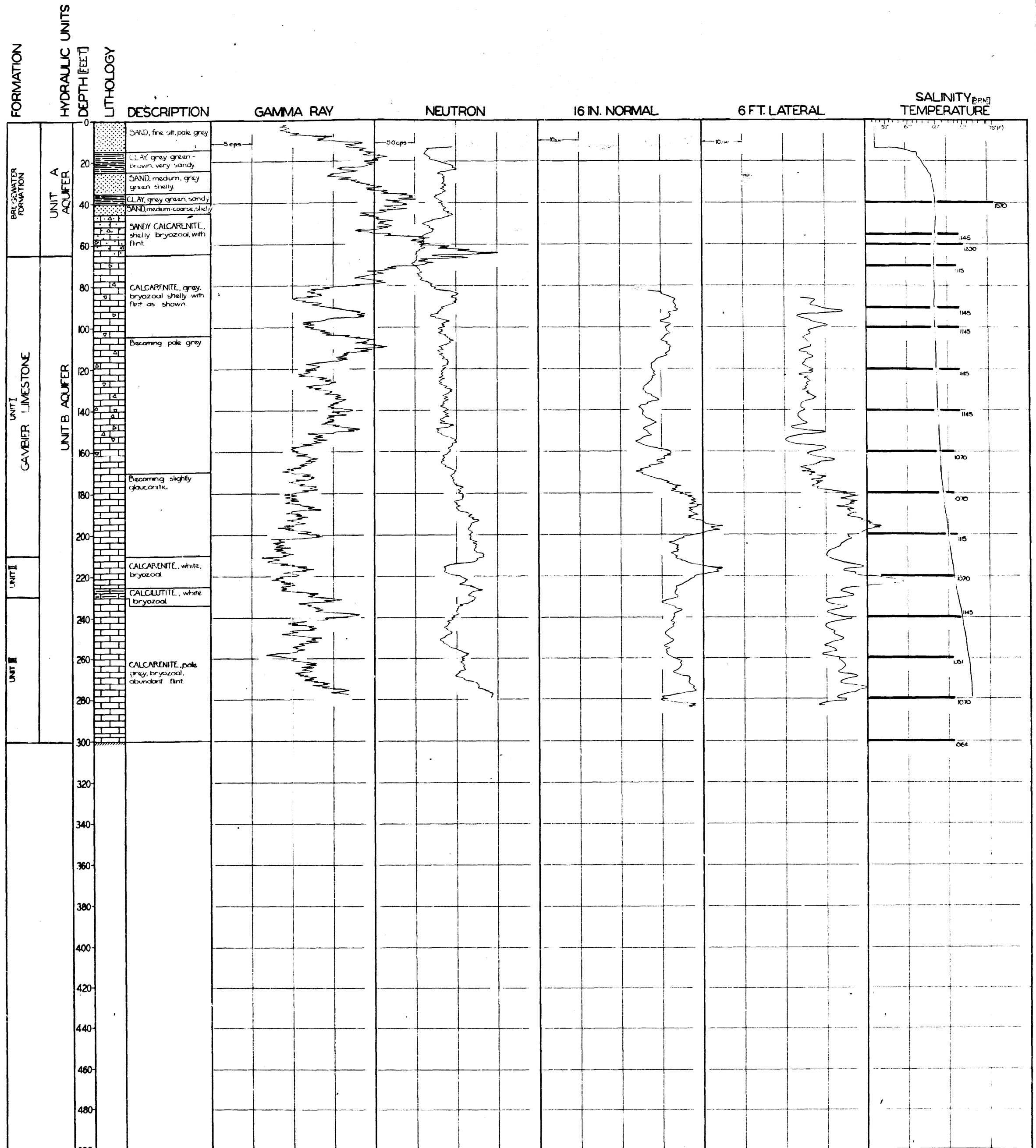
OWNER: Sunlands Irrigation Trust
 DATE OF TEST: 29 Nov 1966
 1 Dec. 1966
 WATER SUPPLY: Irrigation Supply
 from Sunlands I.T.
 WATER LEVEL: 75.60 FT and 75.77 FT. below surface
 AVAILABLE BUILDUP: 77.50 FT. and 77.67 FT.
 ANALYSIS BY: J.N. Cramsie and G.T. Roberts.

TEST	DRAINAGE RATE G.P.H.	CUSECS	CHANGE OF W.L. IN FT. PER LOG CYCLE	Jacob formula $T = \frac{0.183 \cdot Q}{\Delta s}$	TRANSMISSIVITY
29-11-66	930	0.042	13.5 (min)	0.183×0.042	5.7×10^{-4} cusecs/ft. Δ
"	"	"	36.0 (max)	0.183×0.042	2.1×10^{-4} " "
RECOVERY			6.4 (min)	0.183×0.042	1.2×10^{-3} " ○
			53.0 (max)	0.183×0.042	1.5×10^{-4} " "
01-12-66	930	0.041	14.9 (min)	0.183×0.041	5.0×10^{-4} " ▽
"	"	"	45.0 (max)	0.183×0.041	1.7×10^{-4} " "
RECOVERY			5.5 (min)	0.183×0.041	1.4×10^{-3} " □
			53.5 (max)	0.183×0.041	1.4×10^{-4} " "

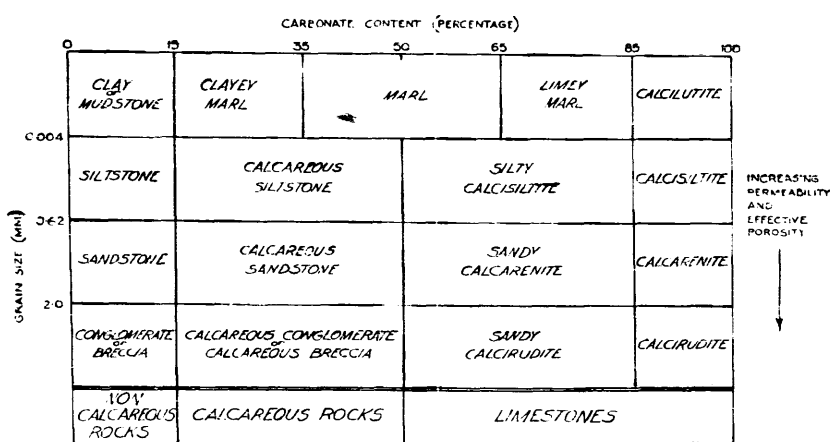
NOTE: Recovery plotted as residual recovery
 where t = Time in minutes since drainage started
 t_1 = " " " " " " " " " " " "

For loc. of BH see
 S7480

DEPARTMENT OF MINES — SOUTH AUSTRALIA			
RIVER MURRAY DRAINAGE INVESTIGATION WAIKERIE DISTRICT SEC. 610. HD. WAIKERIE			
DRAINAGE TEST No. 291166 & 011266 ON BOREHOLE 29.S			
HYDROGEOLOGY SECTION	<i>G. Fisher</i> GEOLOGIST	DRN. G.T.R. TCD. AMED	69-487 G+J
	<i>G. Fisher</i> SENIOR GEOLOGIST	CKD. <i>G.T.</i> EXD.	DATE: 27 Aug '69



ROCK CLASSIFICATION



DEPARTMENT OF MINES - SOUTH AUSTRALIA
SOUTH EAST WATER RESOURCES
TEST AREA 1
GEOLOGICAL LOGS
HOLE NO P5
SECTION
HYDROGEOLOGY
GEOLOGIST
DATE
SCALE AS SHOWN
69-482/6
K14
JULY 1963

FIG. NO B.4
EQUIPMENT USED
FALLING LOGMASTER
OPERATOR
B. TAYLOR

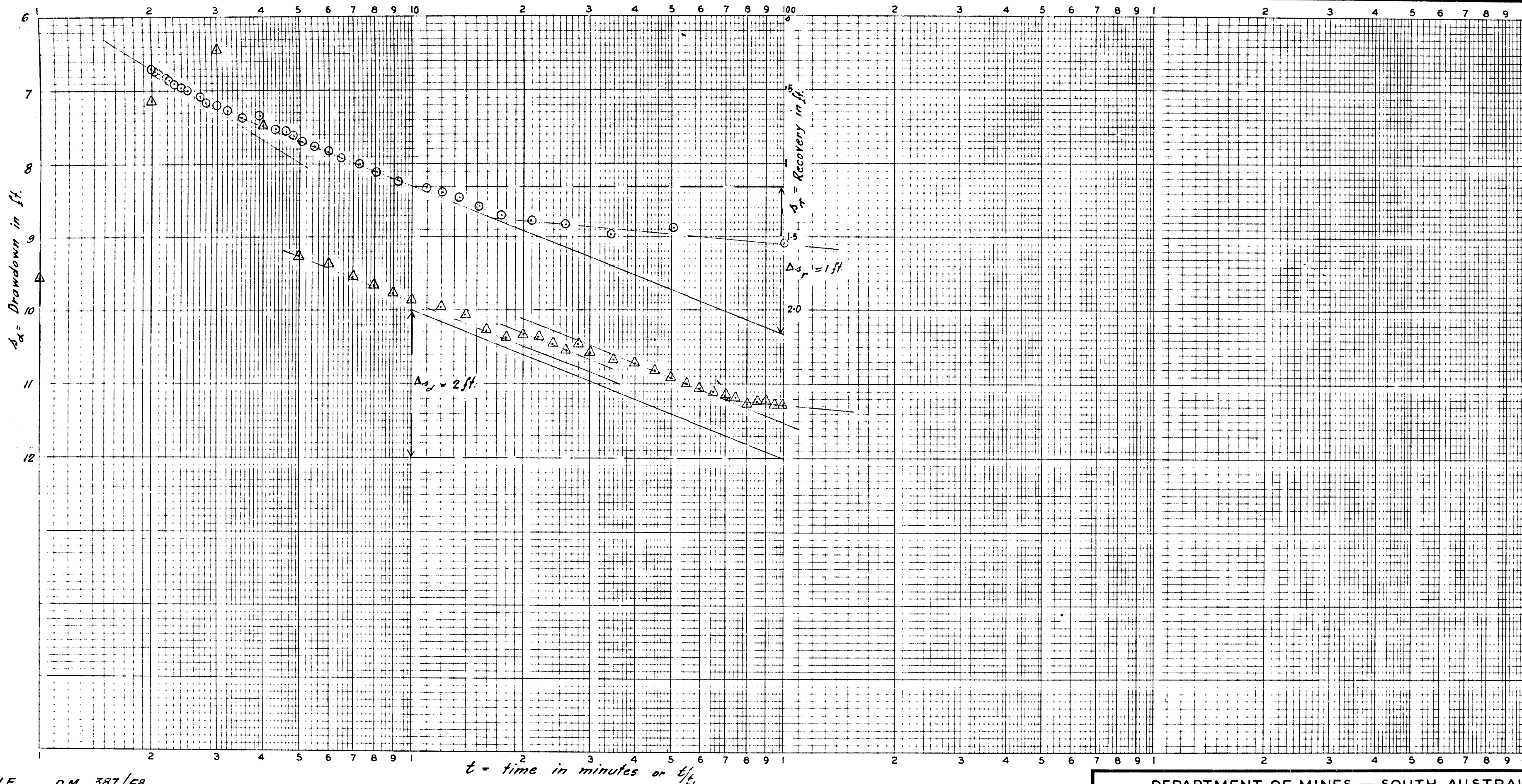


FIG. 4

FILE DM 387/68
 DATE OF TEST : 26th June '69
 WATER LEVEL BEFORE START 146.5 ft
 TYPE OF PUMP : Line shaft.
 PUMP INTAKE SETTING 182 ft.
 AVAILABLE DRAWDOWN 36 ft.

EQUATIONS

$T = \frac{0.183 \times Q}{\Delta s}$
 $S = \frac{2.25 T t}{r^2}$
 T = Transmissivity in $\text{ft}^3/\text{sec}/\text{ft}$.
 Q = Pumping rate in ft^3/sec .
 Δs = drawdown per log cycle.
 S = Storage coefficient
 t = time in seconds
 r = distance to obs. hole in ft.
 1 day = 8.64×10^4 sec

DATA

Q in ft^3/sec	Δs_1 in ft.	Δs_2 in ft.
0.207	2	1

CALCULATION(S)

Drawdown.
 $T = \frac{0.183 \times 0.207}{2} \approx 1.8 \times 10^{-2} \text{ ft}^3/\text{sec}/\text{ft}$
 or $1.8 \times 10^{-2} \times 8.64 \times 10^4 = 1.6 \times 10^3 \text{ ft}^3/\text{day}/\text{ft}$

Recovery.

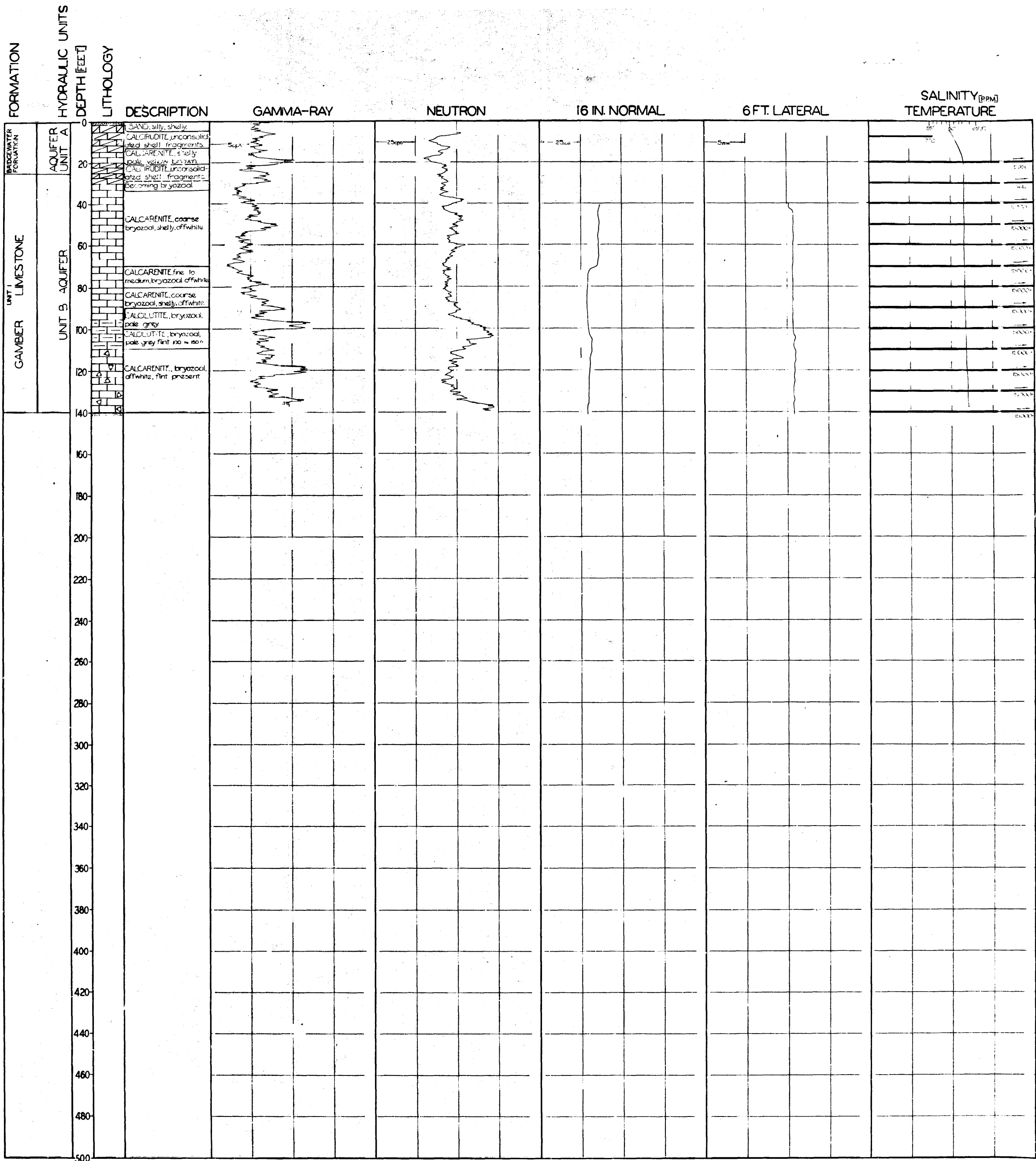
$T = \frac{0.183 \times 0.207}{1} \approx 3.7 \times 10^{-2} \text{ ft}^3/\text{sec}/\text{ft}$
 or $3.7 \times 10^{-2} \times 8.64 \times 10^4 \approx 3.2 \times 10^3 \text{ ft}^3/\text{day}/\text{ft}$

DEPARTMENT OF MINES — SOUTH AUSTRALIA

QUORN TOWN WATER SUPPLY
 ENGINEERING AND WATER SUPPLY DEPARTMENT
 PUMPING TEST ANALYSIS BORE HOLE N° 2

3rd 100 MINUTES STAGE

HYDROGEOLOGY SECTION	GEOLOGIST SENIOR GEOLOGIST	DRN. C.B.	STATE Borehole N° 583002702
		TCD. B.S.G.	69-477/6 Fe 7
		CKD.	
		EXD.	DATE: 4 th Sept. 69.



ROCK CLASSIFICATION

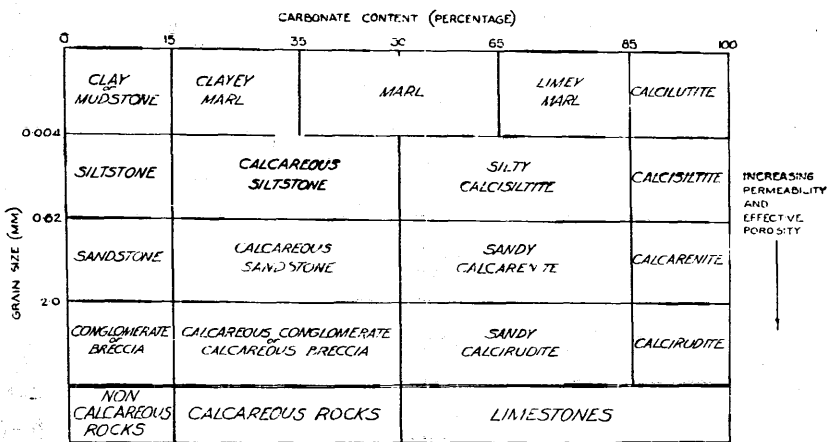


FIG. NO. B6

EQUIPMENT USED: PILING LOGMASTER

OPERATOR: B. P. TAYLOR

DEPARTMENT OF MINES - SOUTH AUSTRALIA

SOUTH EAST WATER RESOURCES

TEST AREA 1

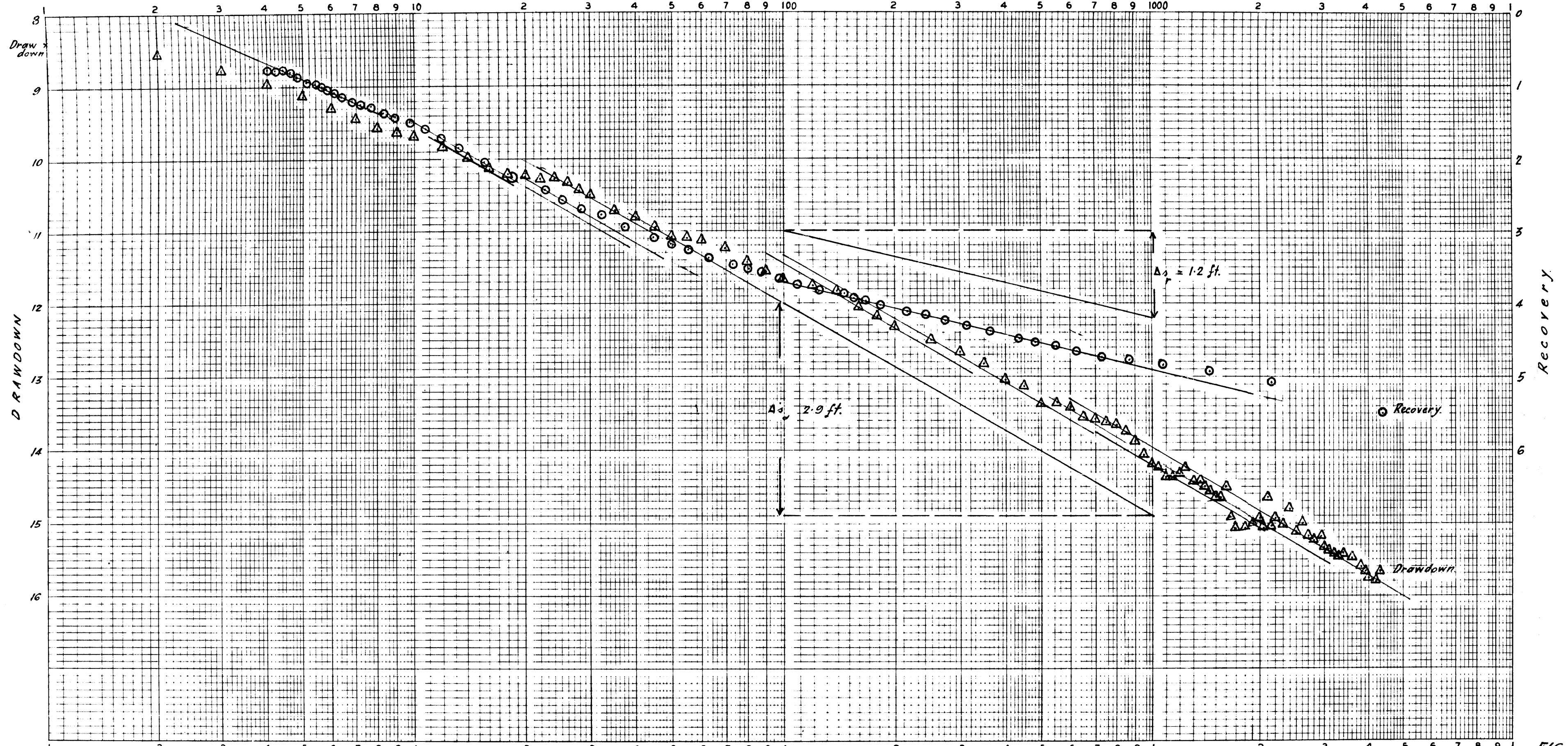
GEOPHYSICAL LOGS

HOLE NO. 17

DATE: 69-468

SCALE: AS SHOWN

DATE: 69-468



FILE D.M. 387/68
 DATE OF TEST 27th June '69
 WATER LEVEL BEFORE START 145.70 ft.
 TYPE OF PUMP. Line shaft.
 PUMP INTAKE SETTING 182 ft.
 AVAILABLE DRAWDOWN 36 ft.

EQUATIONS.
 $T = \frac{0.183 \times Q}{\Delta s}$
 $S = \frac{2.25 T t}{r^2}$
 T = Transmissivity in $\text{ft}^3/\text{sec}/\text{ft}$.
 Q = Pumping rate in ft^3/sec .
 Δs = drawdown per log cycle.
 S = Storage coefficient
 t = time in seconds
 r = distance to obs. hole in ft.
 1 day = 8.64×10^4 sec.

DATA

Q in ft^3/sec .	Δs_d in ft.	Δs_r in ft.
0.209	2.9	1.2

CALCULATION(S)

Drawdown
 $T = \frac{0.183 \times 0.209}{2.9} \approx 1.3 \times 10^{-2} \text{ ft}^3/\text{sec}/\text{ft}.$
 $1.1 \times 10^3 \text{ ft}^3/\text{day}/\text{ft}.$

Recovery.
 $T = \frac{0.183 \times 0.209}{2.9} \approx 3.2 \times 10^{-2} \text{ ft}^3/\text{sec}/\text{ft}.$
 or $3.2 \times 10^{-2} \times 8.64 \times 10^4 \approx 2.3 \text{ ft}^3/\text{day}/\text{ft}.$

DEPARTMENT OF MINES — SOUTH AUSTRALIA			
QUORN TOWN WATER SUPPLY			
ENGINEERING AND WATER SUPPLY DEPARTMENT			
PUMPING TEST ANALYSIS BORE HOLE NO 2			
4350 MINUTES STAGE			
HYDROGEOLOGY SECTION	GEOLOGIST	DRN. C.B.	STATE Borehole No 583002702
		TCD. B.S.G.	69-478/6 Fe7
		CKD.	
	SENIOR GEOLOGIST	EXD.	DATE: 4 th Sept. '69.

FIG 5

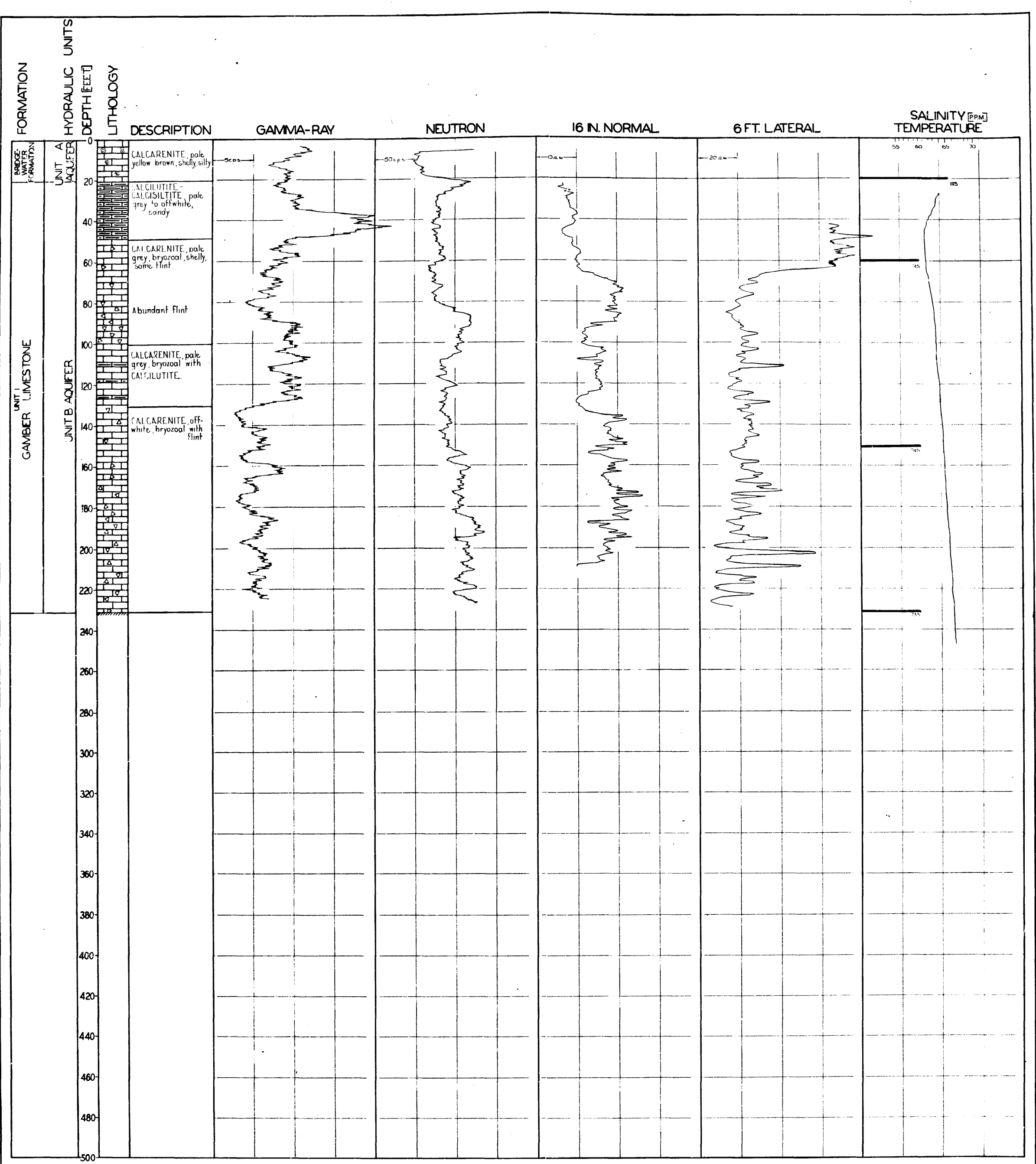


FIG NO. B.8.

EQUIPMENT USED : FALLING LOGMASTER

OPERATOR : B. P. TAYLOR

DEPARTMENT OF MINES SOUTH AUSTRALIA

SOUTH EAST WATER RESOURCES

TEST AREA 1

GEOLOGICAL LOGS

HOLE NO. R 2

SECTION : 0.3M

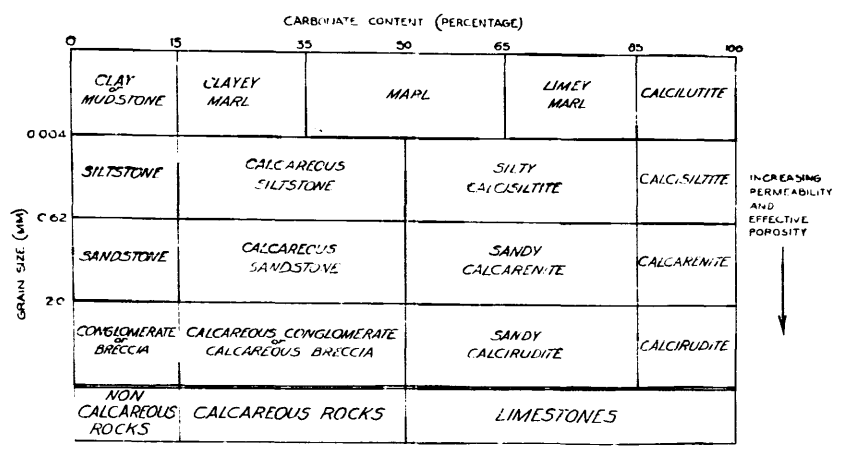
HYDROLOGIST : T. J. M. R. 2

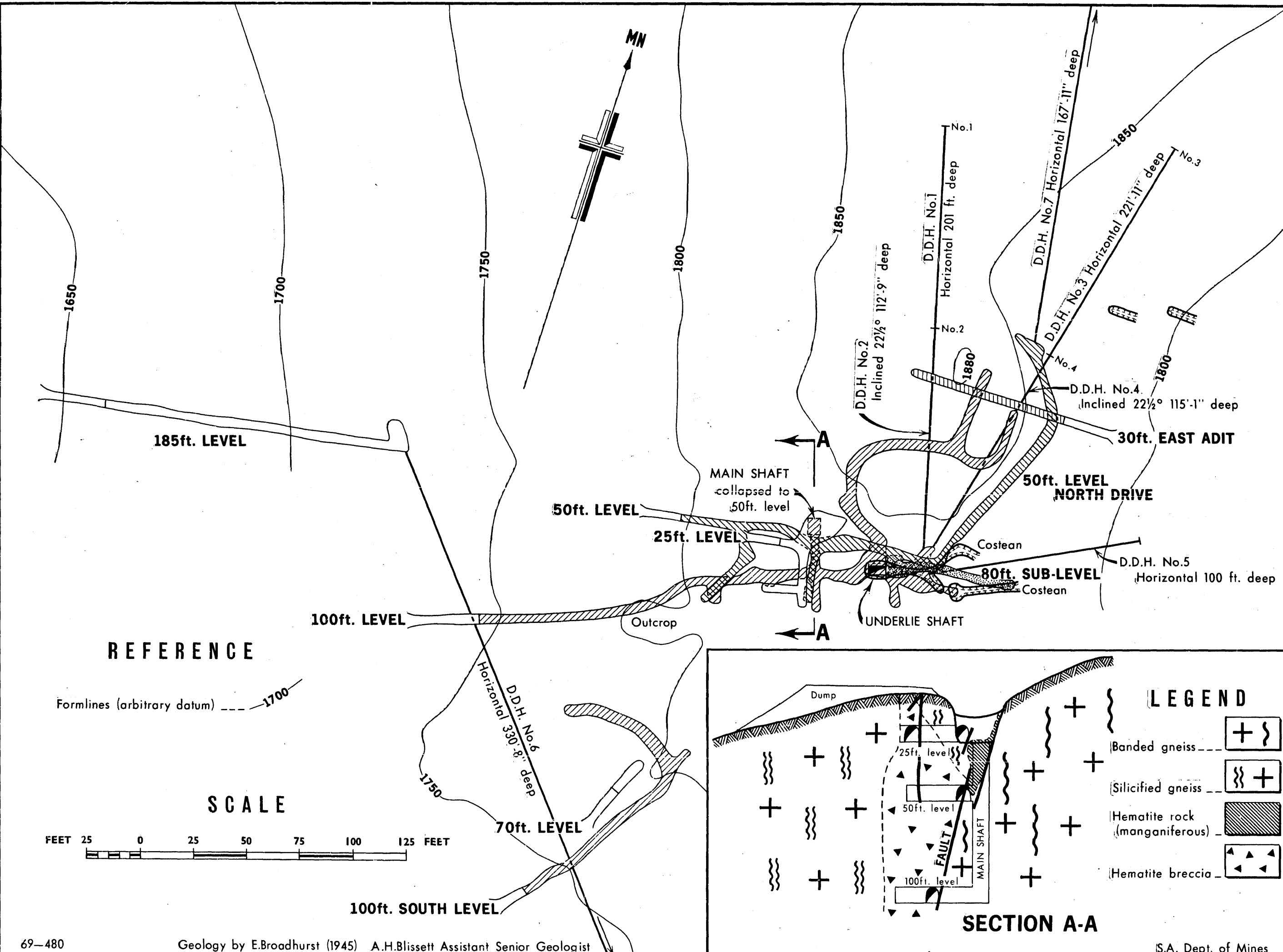
DATE : 69-48/6

SCALE AS SHOWN

Director of Mines (SEN. GEOLOGIST)

ROCK CLASSIFICATION

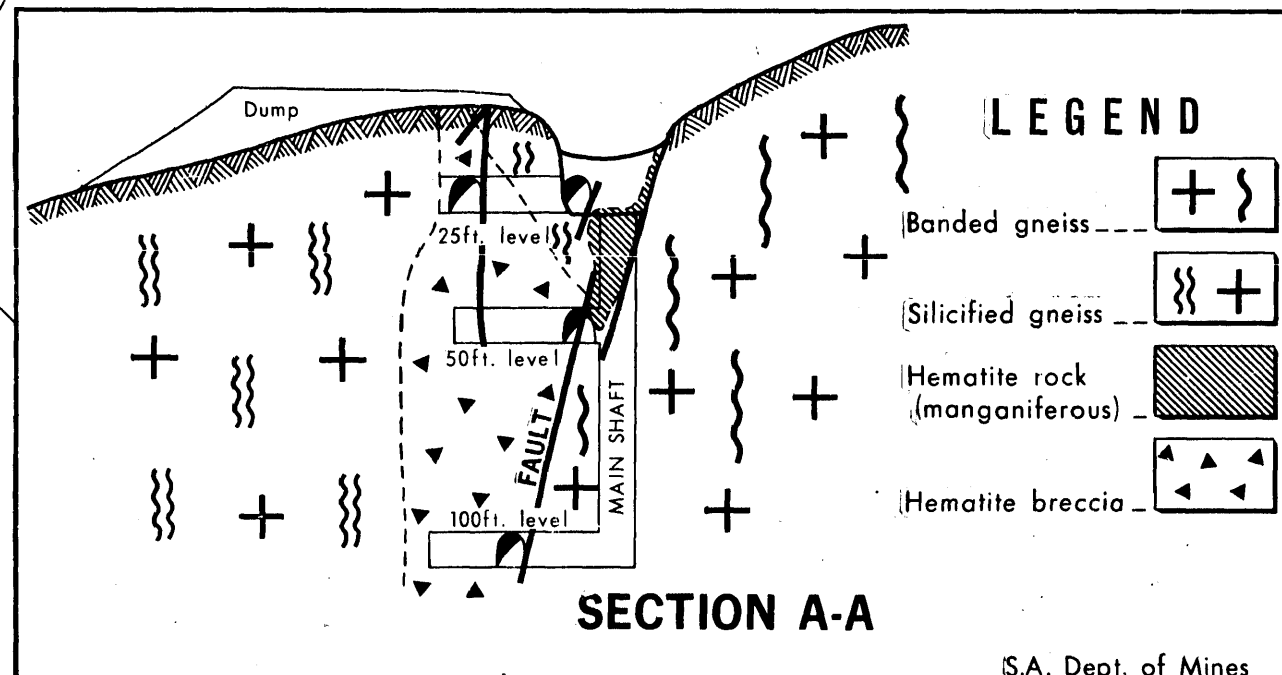
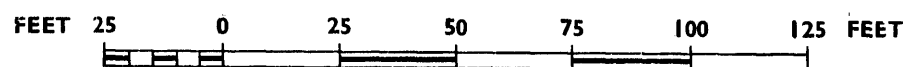




REFERENCE

Formlines (arbitrary datum) --- 1700

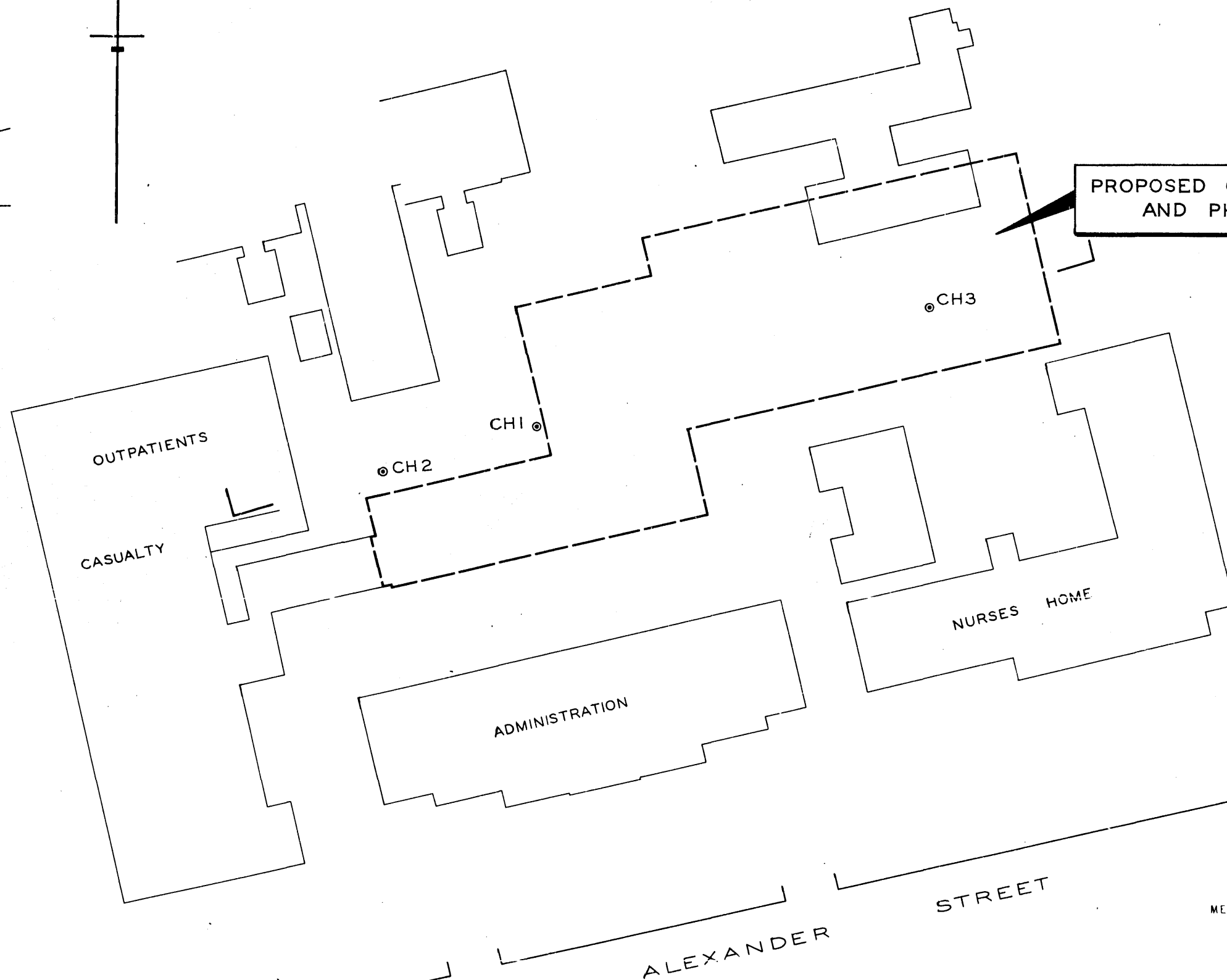
SCALE



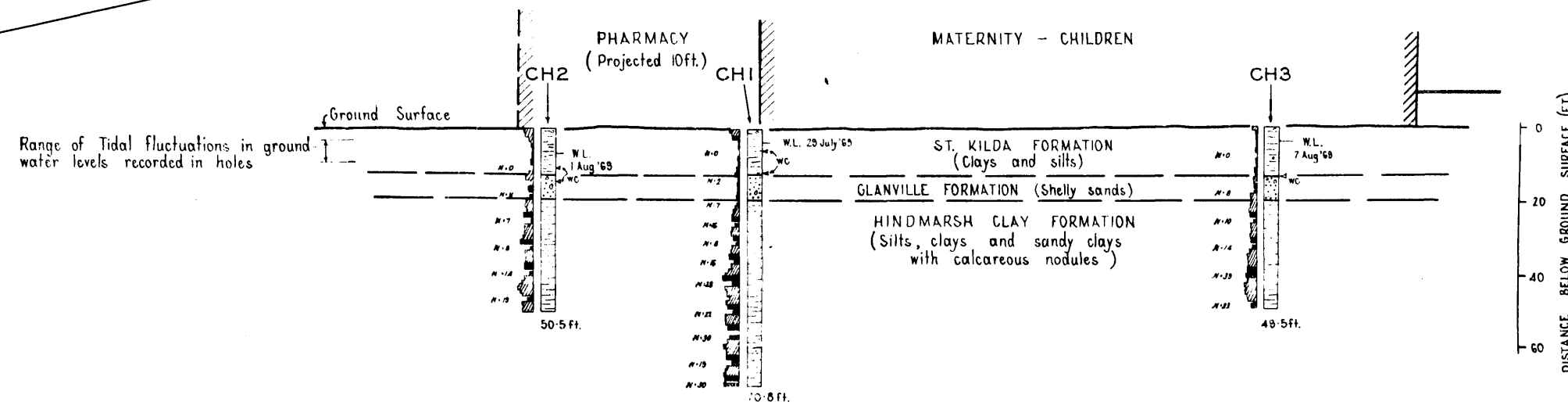
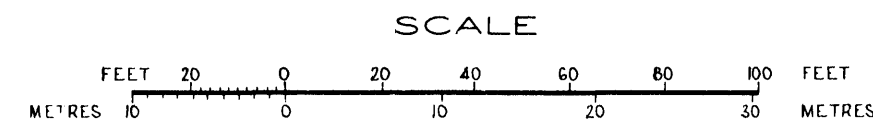
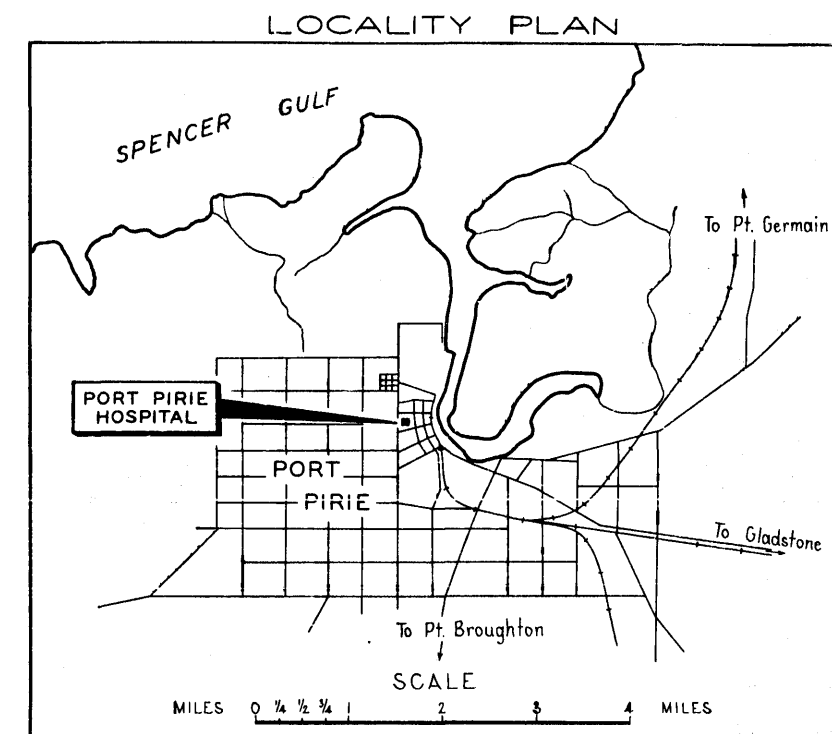
LEGEND

- Banded gneiss --- + }
- Silicified gneiss --- } +
- Hematite rock (manganiferous) --- [Hatched Box]
- Hematite breccia --- [Triangle Pattern Box]

THE TERRACE

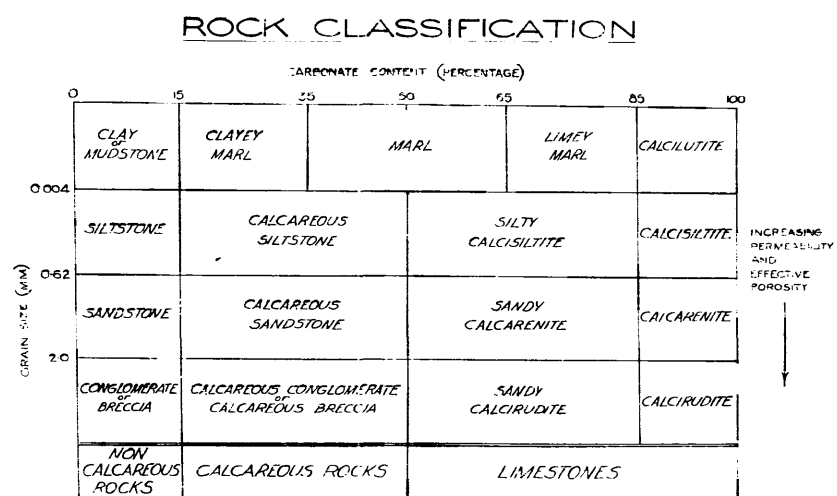
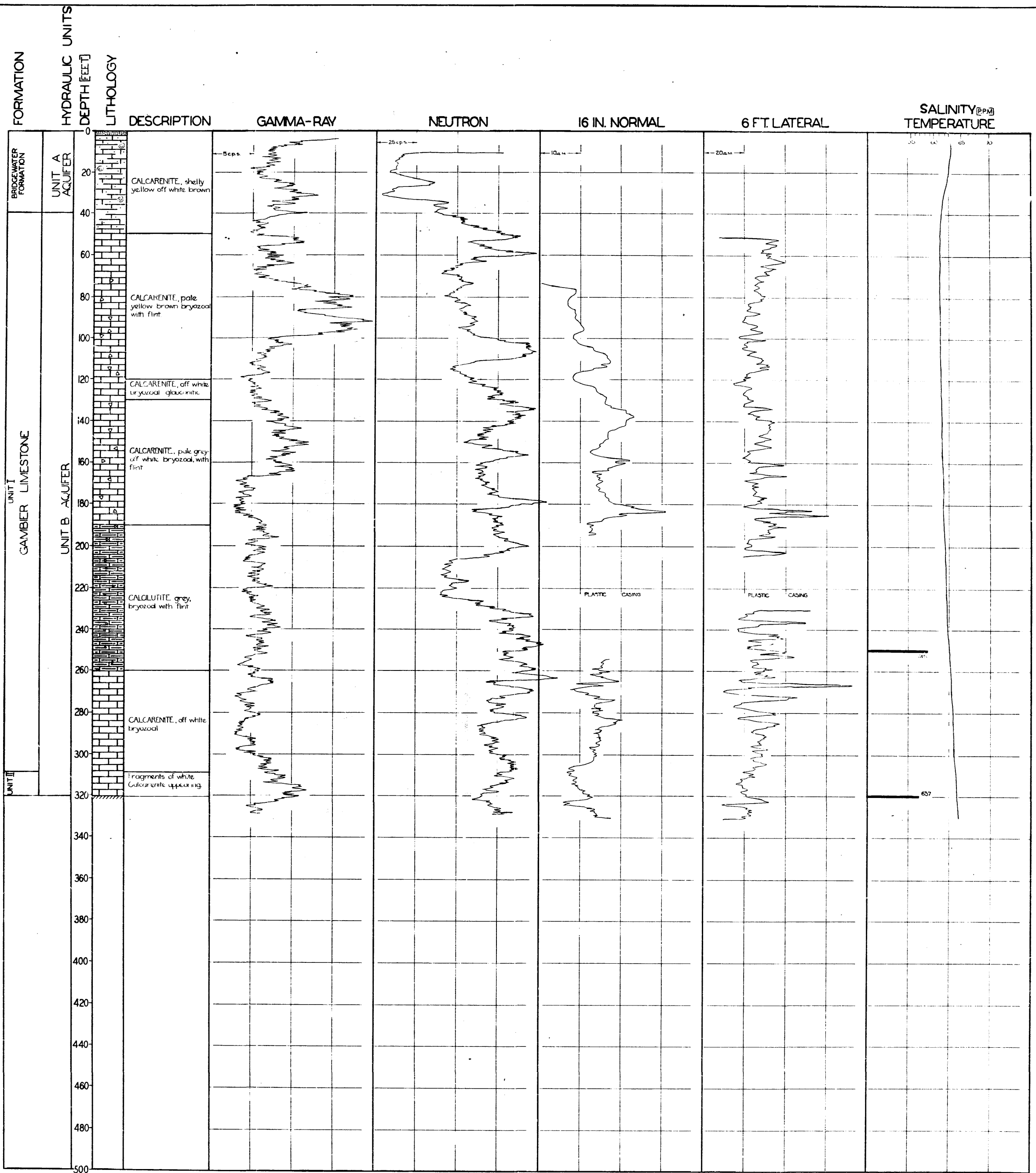


PROPOSED CHILDREN - MATERNITY
AND PHARMACY BLOCK



DEPARTMENT OF MINES - SOUTH AUSTRALIA			
PORT PIRIE HOSPITAL EXTENSIONS - MATERNITY WING PLAN AND GEOLOGICAL SECTION			
ENGINEERING GEOLOGY SECTION	<i>R. H. H.</i> GEOLOGIST	<i>J. P. T.</i> Tect. R.H.	SCALE: As shown 69-479
	<i>so R. P. H.</i> Director of Mines	<i>Chd.</i> SEN. GEOLOGIST	DATE 3 Sept '68

Ga 1



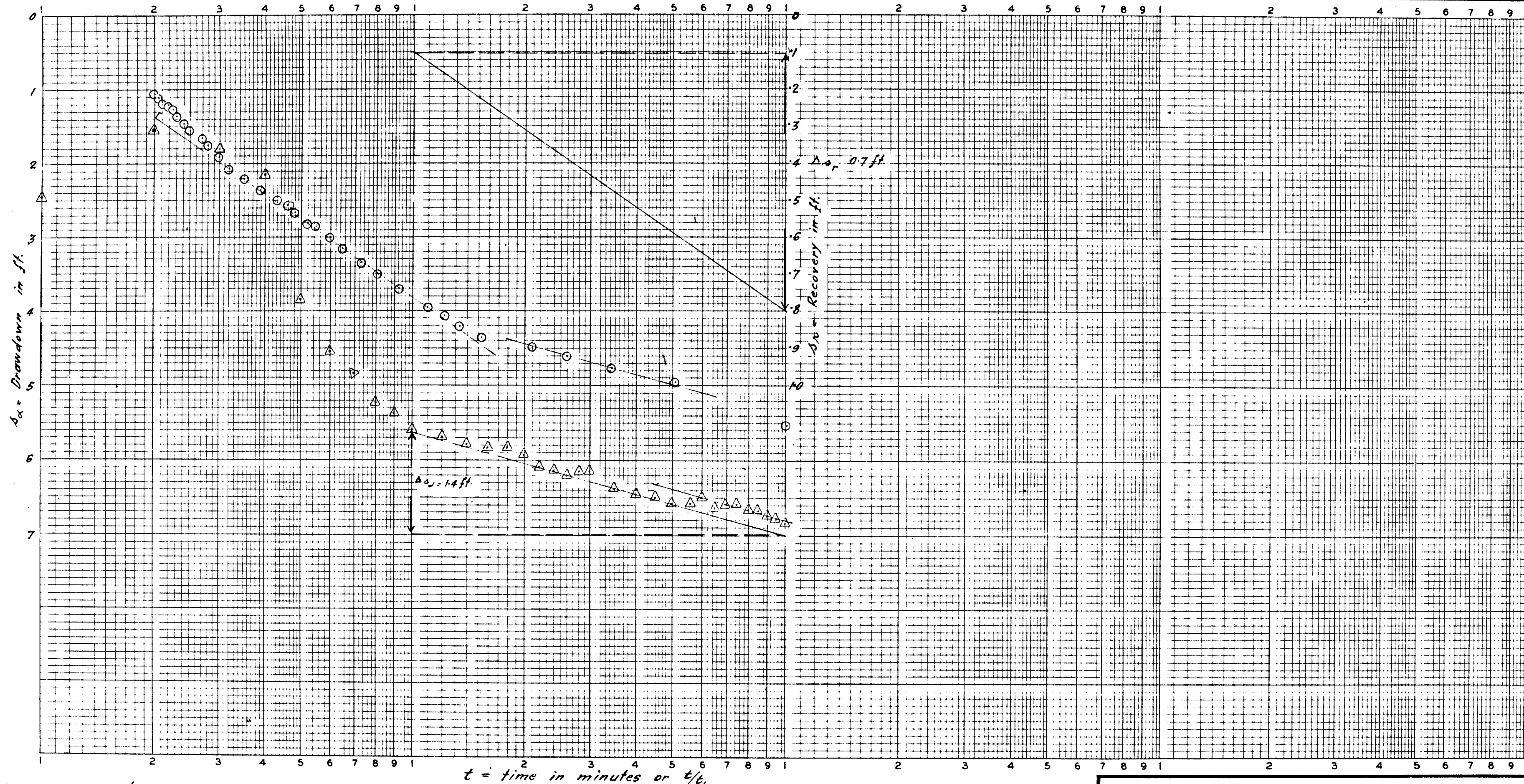


FIG. 3.

FILE D.M. 387/68
 DATE OF TEST : 26th June '69
 WATER LEVEL BEFORE START 145.79
 TYPE OF PUMP : Line shaft.
 PUMP INTAKE SETTING 182 ft.
 AVAILABLE DRAWDOWN 36 ft.

EQUATIONS
 $T = \frac{0.183 \times Q}{\Delta s}$
 $S = \frac{2.25 T t}{r^2}$
 T = Transmissivity in ft³/sec/ft.
 Q = Pumping rate in ft³/sec.
 Δs = drawdown per log cycle
 S = Storage coefficient
 t = time in seconds
 r = distance to obs. hole in ft.
 1 day = 8.64×10^4 sec.

DATA

Q in ft ³ /sec.	Δs_r in ft.	Δs_p in ft.
0.147	1.4	0.7

CALCULATION(S)

Drawdown.
 $T = \frac{0.183 \times 0.147}{1.4} \approx 1.9 \times 10^{-2} \text{ ft}^3/\text{sec}/\text{ft}$
 or $1.9 \times 10^{-2} \times 8.64 \times 10^4 = 1.7 \times 10^3 \text{ ft}^3/\text{day}/\text{ft}$

Recovery.
 $T = \frac{0.183 \times 0.147}{0.7} \approx 3.8 \times 10^{-2} \text{ ft}^3/\text{sec}/\text{ft}$
 or $3.8 \times 10^{-2} \times 8.64 \times 10^4 \approx 3.3 \times 10^3 \text{ ft}^3/\text{day}/\text{ft}$

DEPARTMENT OF MINES — SOUTH AUSTRALIA			
QUORN TOWN WATER SUPPLY			
ENGINEERING AND WATER SUPPLY DEPARTMENT			
PUMPING TEST ANALYSIS BORE HOLE NO 2			
2 nd 100 MINUTES STAGE			
HYDROGEOLOGY SECTION	GEOLOGIST 	DRN. C.B.	STATE Borehole No 583002702
		TCD. B.S.G.	69-476/6 Fe7
		CKD.	
SENIOR GEOLOGIST		EXD.	DATE: 4 th Sept. 69

APPENDIX C
SUMMARY OF WATER
ANALYSES

APPENDIX C

A.T.S. WATER ANALYSIS AND DILUTION
ANALYSES (See remarks for D)

HOLE	DEPTH FT.	SALIN- ITY ppm	MINES DEPART- MENT ANALYSIS NUMBER	RE- MARKS	HOLE	DEPTH FT.	SALIN- ITY ppm	MINES DEPT. ANALYSIS NUMBER	RE- MARKS
P2	15	1070	W2017/69		R1	118	585	W2838/69	
P2	25	985	W2019/69		R1	280	530	W2839/69	
P2	40	885	W2020/69						
P2	40	885	W2021/69		R2	20	1115	W2840/69	
P2	50	885	W2023/69		R2	60	745	W2841/69	
P2	60	885	W2025/69		R2	150	745	W2842/69	
P2	70	770	W2026/69						
P2	80	770	W2028/69		R3	20	830	W2843/69	
P2	90	770	W2030/69		R3	45	1320	W2844/69	
P2	100	770	W2033/69		R3	180	700	W2845/69	
P2	110	770	W2034/69						
P2	120	800	W2036/69		R4	40	1015	W2848/69	
P2	130	830	W2038/69		R5	20	955	W2849/69	
	to		to		R5	75	1076	W2850/69	
	300		W2071/69		R5	130	1320	W2851/69	
P3	20	470	W2072/69		R5	230	1455	W2853/69	
P3	70-75	700	W2075/69		R5	280	3455	W2854/69	
P3	90-95	855	W2076/69		R5	300	3455	W2855/69	
P3	115-120	830	W2078/69						
P3	130-135	855	W2079/69		R6	300	700	W3432/69	
P3	150-155	855	W2080/69						
P3	170-175	855	W2081/69		R7	250	745	W3434/69	
P3	255-260	885	W2084/69		R7	320	745	W3435/69	
P3	275-280	885	W2085/69						
P3	295-300	955	W2086/69		R8	4	415	W3437/69	
P3	315	1070	W2087/69		R8	50	445	W3438/69	
	to		to		R8	100	385	W3439/69	
	460		W2094/69		R8	150	415	W3440/69	
					R8	200	415	W3441/69	
P5	55	1145	W3553/69		R8	250	415	W3442/69	
P5	70	1115	W3555/69		R8	300	645	W3443/69	
P5	90	1145	W3556/69		R9	50	8685	W6375/69	
P5	120	1145	W3558/69		R9	100	8685	W6376/69	
P5	160	1070	W3560/69		R9	150	9415	W6377/69	
P5	200	1115	W3521/69		R9	200	9500	W6378/69	
P5	240	1115	W3523/69		R9	250	16300	W6379/69	
P5	280	1070	W3525/69		R9	300	19800	W6380/69	
P5	300	1070	W3526/69						
P6	40	1070	W3529/69		R10	100	1170	W3458/69	
P6	75	33432	W3532/69	D	R10	150	1170	W3459/69	
P6	85	35390	W3533/69	D	R10	200	1115	W3460/69	
P6	100	38400	W3534/69	D	R10	250	1070	W3461/69	
P6	120	40500	W3535/69	D	R10	300	1145	W3462/69	
P7	50	19250	W3541/69	D					
P7	60	16580	W3542/69	D	R11	6	4555	W3464/69	
P7	70	19050	W3543/69	D	A1	20	19450+	W3402/69	
P7	80	31600	W3544/69	D	A2	20	1320	W3403/69	
P7	90	58990	W3545/69	D	A3	20	645	W3404/69	
P7	100	61697	W3546/69	D	A5	20	1045	W3405/69	
P7	110	63830	W3547/69	D	A5	20	345	W3406/69	
P7	120	64350	W3548/69	D	A6	20	445	W3407/69	
P7	130	72200	W3549/69	D	A7	20	445	W3408/69	
P7	140	67950	W3550/69	D	A8	20	420	W3409/69	
P8	20	10785	W3823/69		A9	20	1145	W3410/69	
P8	40	15000+	W3825/69		A10	20	2030	W3411/69	
P8	50	15000+	W3826/69		A11	80	555	W3412/69	
P8	70	15000+	W3828/69		A12	35	3455	W3413/69	
P8	80	15000+	W3829/69		A13	20	83170+	W3414/69	D
P8	100	15000+	W3831/69						
P8	110	15000+	W3832/69						
P8	120	15000+	W3833/69						

APPENDIX C

A.T.S. WATER ANALYSIS AND DILUTION
ANALYSES (See Remarks for D)

HOLE	DEPTH	SALIN- ITY ppm	MINES DEPT., ANALYSIS NUMBER	RE- MARKS	HOLE	DEPTH FT.	SALIN- ITY ppm	MINES DEPT. ANALYSIS NUMBER	RE- MARKS
A14	20	2545	W3415/69	D					
A15	20	64470	W3416/69						
A16	20	5285	W3417/69						
A17	20	915	W3418/69						
A18	20	745	W3419/69						
A20	20	645	W3421/69						
A21	20	915	W3422/69						
A22	20	530	W3423/69						
A23	20	745	W3424/69						
A24	20	2230	W3425/69						
A25	20	700	W3426/69						
A26	20	615	W3427/69						
A27	20	2030	W3428/69						
A28	20	10145	W3429/69						
A29	25	345	W3430/69						
R11	20	2900	W3431/69						

APPENDIX C

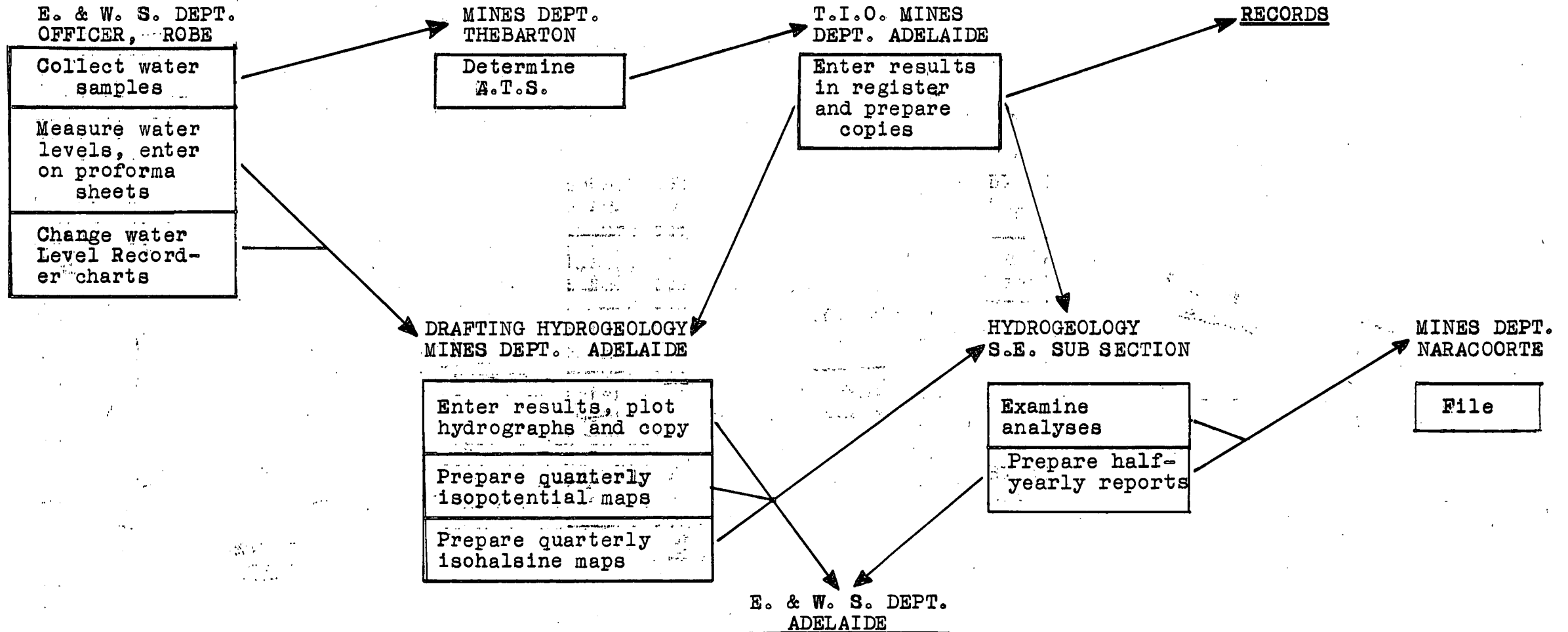
FULL WATER ANALYSIS

HOLE	DEPTH FT.	SALIN- ITY ppm	MINES DEPT., ANALYSIS NUMBER	RE- MARKS	HOLE	DEPTH FT.	SALIN- ITY ppm	MINES DEPT., ANALYSIS NUMBER	RE- MARKS
P1	13-40	597	W1911/69		A15	20 X	64470	W3416/69	
P1	70-80	566	W1912/69						
P1	90-100	593	W1913/69						
P1	135-140	620	W1910/69						
P1	155-175	618	W1909/69						
P1	170-220	628	W1908/69						
P1	285	620	W1906/69						
P1	325-330	598	W1907/69						
P1	380-365	582	W1902/69						
P1	425	598	W1903/69						
P1	450	606	W1904/69						
P2	15	747	W3342/69						
P2	25	968	W2018/69						
P2	60	933	W2024/69						
P2	100	797	W2032/69						
P2	200	960	W2050/69						
P2	290	910	W2068/69						
P3	20	1133	W3352/69						
P3	35-40	924	W2073/69						
P3	50-55	613	W2074/69						
P3	110-115	894	W2077/69						
P3	190-195	855	W2082/69						
P3	235-240	869	W2083/69						
P3	335-340	1137	W2088/69						
P3	475-480	1055	W2095/69						
P5	40	1448	W3552/69						
P5	60	1107	W3554/69						
P5	100	1098	W3557/69						
P5	140	1093	W3559/69						
P5	180	1051	W3561/69						
P5	220	1070	W3522/69						
P5	260	1051	W3524/69						
P5	300	1064	W3527/69						
P6	20	760	W3528/69						
P6	40	1008	W3529/69						
P6	50	1256	W3530/69						
P6	75	33432	W3531/69						
P6	120 X	41334	W3536/69						
P7	7.5	769	W3537/69						
P7	20	5611	W3538/69						
P7	30	6953	W3539/69						
P7	40	11829	W3540/69						
P7	60	16580	W3542/69						
P7	100 X	61697	W3546/69						
P7	140 X	63014	W3551/69						
P8	10	5032	W3822/69						
P8	30	13824	W3824/69						
P8	60	18600	W3827/69						
P8	90 X	26925	W3830/69						
P8	120 X	25013	W3834/69						
R2	230	733	W2843/69						
R3	268	618	W2847/69						
R5	180	1860	W2852/69						
R5	300	3685	W2856/69						
R7	320	637	W3436/69						
R8	300	644	W3444/69						
A1	20	19550	W3402/69						
A13	20 X	83170	W3414/69						

APPENDIX D

FLOW CHART AND WATER LEVEL PROFORMA

FLOW CHART



SOUTH EAST WATER RESOURCES

TEST AREA 1

OBSERVATION HOLE WATER LEVELS

NAME: _____

DATE: _____

	Borehole State No.	Borehole Project No.	R.L. of top of casing	Depth to water from casing top.	R.L. water level	Monthly Sampling?
	450002701	A15	-3.4			
	450002703	A17	5.5			
	450001701	A1	-3.3			
	450001705	P6	6.4			Yes
	450001704	A4	7.8			
	687031601	P7	-3.7			
	687000301	P8	-2.0			
	262002204	R9	7.8			
	262000103	A12	-2.6			
	262000303	A13	-			
	262008002	A14	-			
	262000505	R10	24.1			Yes
	262000507	A31	116.6			
	262000601	A10	113.0			
	262000704	A32	25.6 (ground)			
	262011201	A9	32.2			
	262000803	R6	36.5			
	262009001	R7	32.8			Yes
	450002401	A5	40.7			
	450002503	A6	39.5			
	450002502	A7	38.1			
	450002501	A8	36.9			
	450001201	R8	37.8			Yes
	643019501	A19	45.3			Yes
	643007401	A20	49.5			
	643010501	A21	46.6			
	643011401	A22	79.2			Yes

	Borehole State No.	Borehole Project No.	R.L.of top of casing	Depth to water from casing top	R.L. water level	Monthly Sampling ?
	631015201	P5	79.7			Yes
	631003701	A26	72.4			
	631003502	A25	66.0			
	631003501	A24	60.6			
	631003301	A23	53.6			
	631001101	R3	45.1			
	631000201	R5	36.1			Yes
	631002101	R1	42.9			
	631005101	R2	35.3			
	631010801	A27	72.4			Yes
	262014301	A28	-			
	262013502	A29	34.1			Yes

SOUTH EAST WATER RESOURCES

TEST AREA 1

MONTHLY WATER SAMPLING

	State borehole Number	Project borehole Number	Sampling depths (ft.)		Remarks
			FIRST	SECOND	
	450001705	P6	55	75	
	262000505	R10	75		
	262009001	R7	50		
	450001201	R8	75		
	643019501	A19	19		
	643011401	A22	19		
	631015201	P5	80		
	631000201	R5	120	300	
	631010801	A27	19		
	262013502	A29	34		

SOUTH EAST WATER RESOURCES
TEST AREA 1
QUARTERLY WATER SAMPLING

	State borehole Number	Project borehole Number	Sampling depths (ft.)		Remarks
			FIRST	SECOND	
	450002701	A15	19		
	450002703	A17	19		
	450001701	A1	39		
	450001705	P6	55	75	
	450001704	A4	19		
	687031601	P7	37	75	
	687000301	P8	30	75	
	262002204	R9	75	250	
	262000103	A12	34		
	262000303	A13	19		
	262008002	A14	11		
	262000505	R10	75	250	
	262000507	A31	75		
	262000601	A10	19		
	262000704	A32	20		
	262011201	A9	19		
	262000803	R6	75		
	262009001	R7	50		
	450002401	A5	19		
	450002503	A6	19		
	450002502	A7	19		
	450002501	A8	19		
	450001201	R8	75		
	643019501	A19	19		
	643007401	A20	19		
	643010501	A21	19		
	643011401	A22	19		
	631015201	P5	80	250	
	631003701	A26	19		
	631003502	A25	19		
	631003501	A24	19		
	631003301	A23	19		

State borehole Number	Project borehole Number	Sampling depths (ft.)		Remarks
		FIRST	SECOND	
631001101	R3	75	250	
631000201	R5	120	300	
631002101	R1	75		
631005101	R2	75		
631010801	A27	19		
262014301	A28	19		
262013502	A29	34		

APPENDIX E

BOREHOLE LEVEL SURVEY

DATE: 12th August, 1969

DATUM M.S.L. = 0 at Port Adelaide

S.A. DEPARTMENT OF MINES

APPENDIX E.

Borehole level survey

Sheet 1 of 3

Surveyor: N. Edwards
Level Book 155, 367

Section	Bore	State No.	R.L. Peg	R.L.G.L.	R.L. Reference	Casing above G.L.	Date	Depth to Water	R.L. of S.W.L.	R.L. of Water Cut	Remarks
	A1	450001701		-5.252	-3.297	1.955					L.B. 155 Page 25
	A2	450001702		-5.829	-7.784	1.955					" 25
	A3	450001703		1.279	3.237	1.958					" 25
	A4	450001704		7.885	7.773	0.082					" 27
	A5	450002401		38.739	40.734	1.995					" 31
	A6	450002503		37.480	39.514	2.034					" 31
	A7	450002502		36.125	38.128	2.003					" 31
	A8	450002501	36.770	34.646	36.918	2.272					" 24
	A9	262011201	30.840	30.184	32.218	2.034					" 24
	A10	262000601		111.132	112.932	1.800					" 33
	A11	262000506	21.240	23.842	25.779	1.937					" 24
	A12	262000103		-3.977	-2.597	1.380					" 41
	A13	262000303			N/L						N/L
	A14	2620008002			N/L						N/L
	A15	450002701		-5.341	-3.389	1.952					" 28
	A16	450002702		-0.994	0.990	1.984					" 28
	A17	450002703	3.649	3.488	5.496	2.008					" 26
	A18	450002801		7.673	9.489	1.816					" 27
	A19	643019501		42.985	45.333	2.348					" 39
	A20	643007401		47.118	49.536	2.418					" 36
	A21	643010601		44.680	46.580	1.900					" 36
	A22	643011401		77.591	79.203	1.612					" 35
	A23	631003301		51.644	53.612	1.968					" 37

S.A. DEPARTMENT OF MINES

Sheet 2 of 3

DATE: 12th August, 1969

DATUM M.S.L. = 0 at Port Adelaide

APPENDIX E

Surveyor: N. Edwards
Level Book 155, 367, 368

Borehole level survey

Section	Bore	State No.	R.L. Peg	R.L.G.L.	R.L. Reference	Casing above G.L.	Date	Depth of Water	R.L. of S.W.L.	R.L. of Water Cut	Remarks
	A24	631003501		58.581	60.591	2.010					L.B.155 Page 37
	A25	631003502		64.015	65.954	1.939					" 38
	A26	631003701		70.497	72.419	1.922					" 38
	A27	631010801		31.688	33.303	1.615					" 41
	A28	262014301			N/L						N/L
	A29	262013502		32.245	34.107	1.862					" 40
	A30				N/L		Drilled as R11				N/L
	A31	262000507		115.923	116.568	0.645					" 33
	A32	262000704		26.628	No casing visible =						" 32
	A33	262000703		35.675	35.675	0.000					" 33
	A34	262000701		32.272	32.815	0.543					" 32
	A35	262000702		28.388	No casing visible =						" 32
	P1	631002102		41.170	41.630	0.460					" 18
	P2	262000802		34.670	35.090	0.420					" 21
	P3	262000504	21.240	20.870	21.330	1.460					L.B.368 Page 3
	P4	631017903		41.870	42.010	0.140					L.B.155 Page 18
	P5	631015201		79.208	79.720	0.512					" 35
	P6	450001705		5.926	6.384	0.458					" 25
	P7	687031601		-3.915	-3.720	0.195					" 42
	P8	687000301		-2.813	-1.968	0.845					" 41
	R1	631002101	41.200	41.170	42.870	1.700					" 18
	R2	631005101		33.050	35.250	2.200					" 19
	R3	631001101	42.990	43.200	45.130	1.930					" 18

S.A. DEPARTMENT OF MINES

DATE: 12th August, 1969

Sheet 3 of 3

DATUM M.S.L. = 0 at Port Adelaide

APPENDIX E

Surveyor: N. Edwards

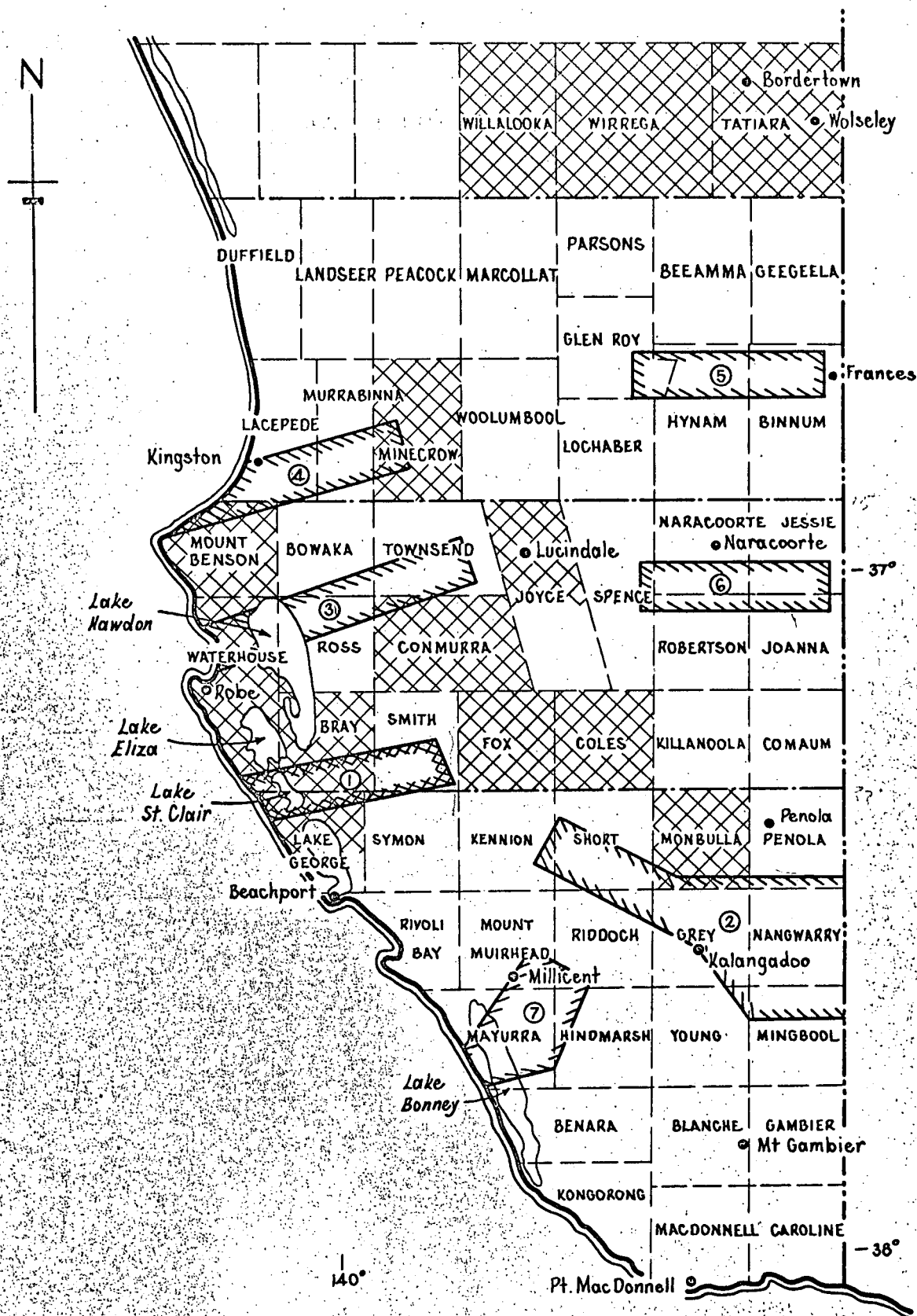
Level Book 155, 367.

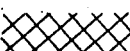
Borehole level survey

Section	Bore	State No.	R.L. Peg	R.L.G.L.	R.L. Reference	Casing above G.L.	Date	Depth of Water	R.L. of S.W.L.	R.L. of Water Cut	Remarks
	R4	631015202			N/L						L.B. Page
	R5	631000201	34.370	34.400	36.050	1.650					L.B. 155 Page 18
	R6	262000803		34.610	36.530	1.920					" 21
	R7	262009001	31.050	30.550	32.770	2.220					" 21
	R8	450001201	36.580	35.297	37.827	2.459					" 24
	R9	262002204		5.338	7.785	2.447					" 43
	R10	262000505	21.240	21.620	24.0791	2.459					" 24
	R11	687032002	4.300	4.380	6.050	1.670					" 367 25

Miscellaneous Bores

Robe	1	687999119		10.079	10.899	0.820					L.B. 155 Page 29
		262000201		-1.083	-1.083	0.000					" 30
		450002504		40.510	42.132	1.622					" 31
		450002704		9.412	9.959	0.547					" 28



-  Test area (completed)
-  Test area (proposed)
-  Borehole survey complete

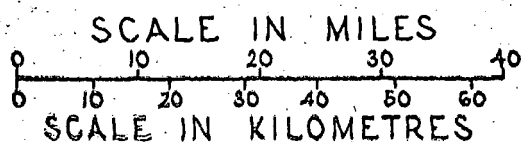


FIG: I

DEPARTMENT OF MINES SOUTH AUSTRALIA

HYDROGEOLOGY
SECTION

Des. B.M.

Tcd. R.H.

Ckd. L.V.W.

Exd. C.B.

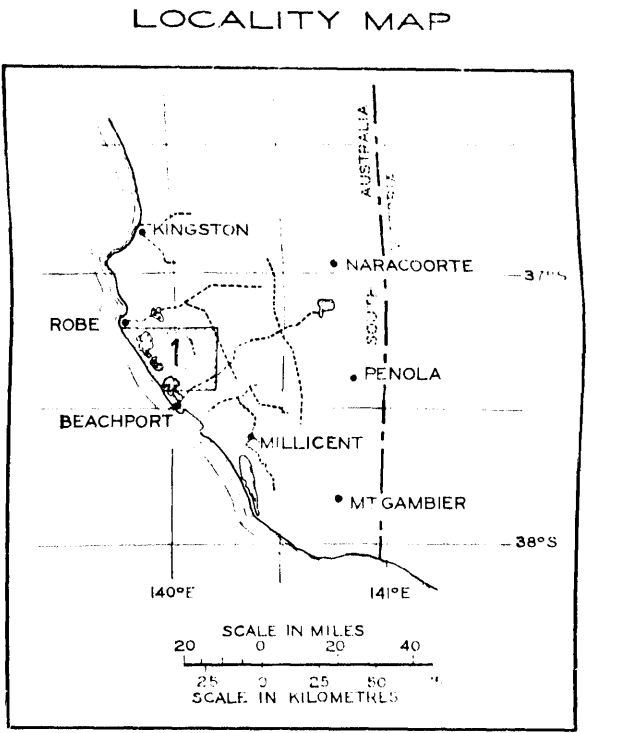
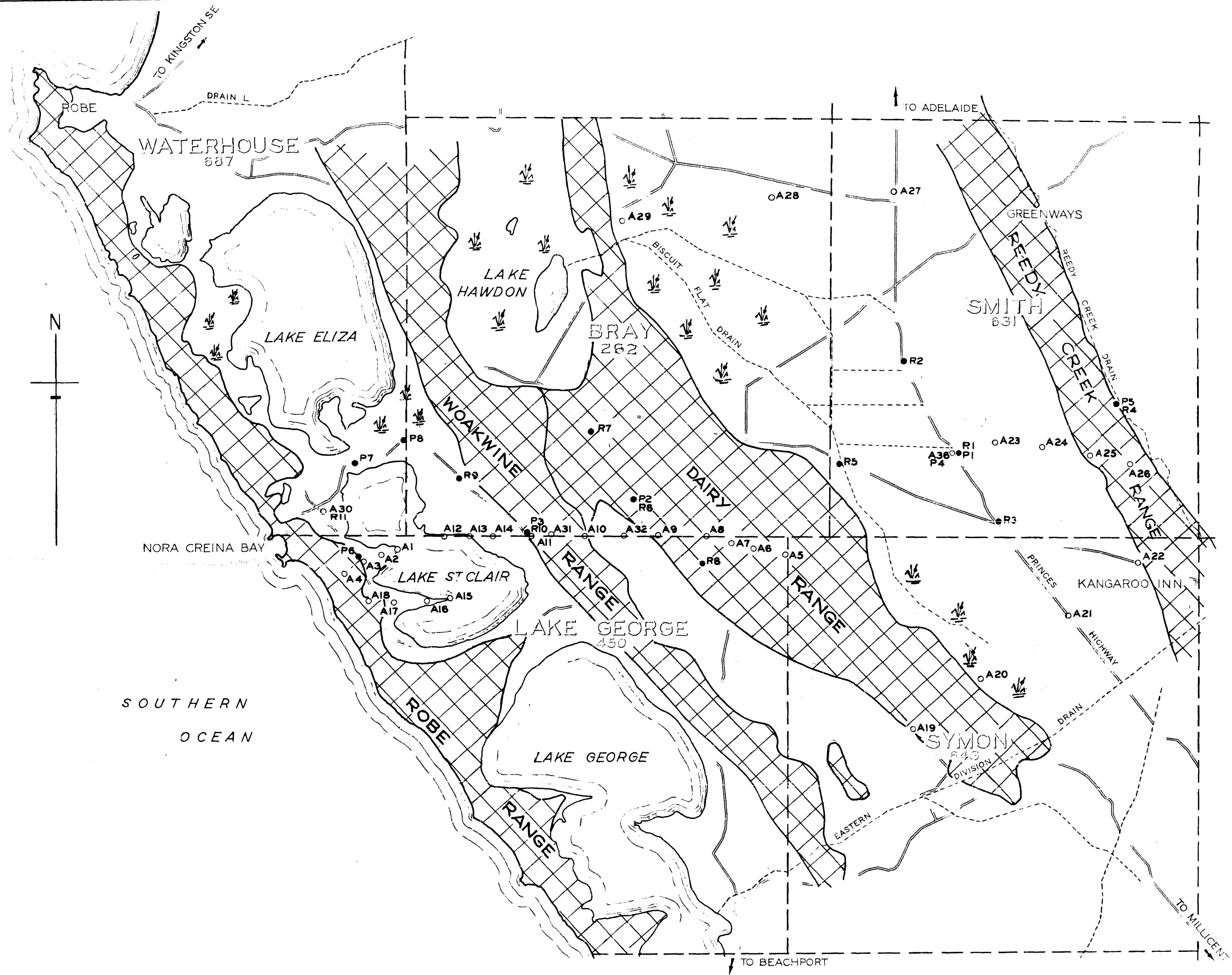
SOUTH-EAST WATER RESOURCES
COMPLETED & PROPOSED INVESTIGATIONS

LOCALITY PLAN

SCALE: 1 inch = 16 miles

S7383 Kae

DATE: 23 July 1969



- LEGEND**
- Road
 - - - Drain
 - - - Hundred Boundary
 - SMITH 631 Hundred Name
 - A26 Borehole into UNIT A AQUIFER with programme number.
 - R3 Borehole into UNIT B AQUIFER with programme number.
 - QUATERNARY
 - DUNE RANGE
Bridgewater Formation either exposed or covered by shallow soils.
 - INTERDUNE AREA
Mainly covered by clay soils and swamps as shown.

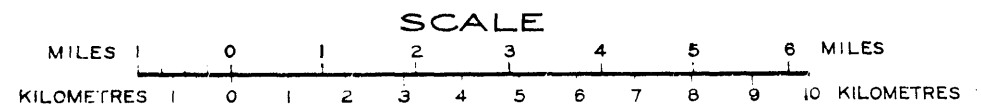


FIG: 2

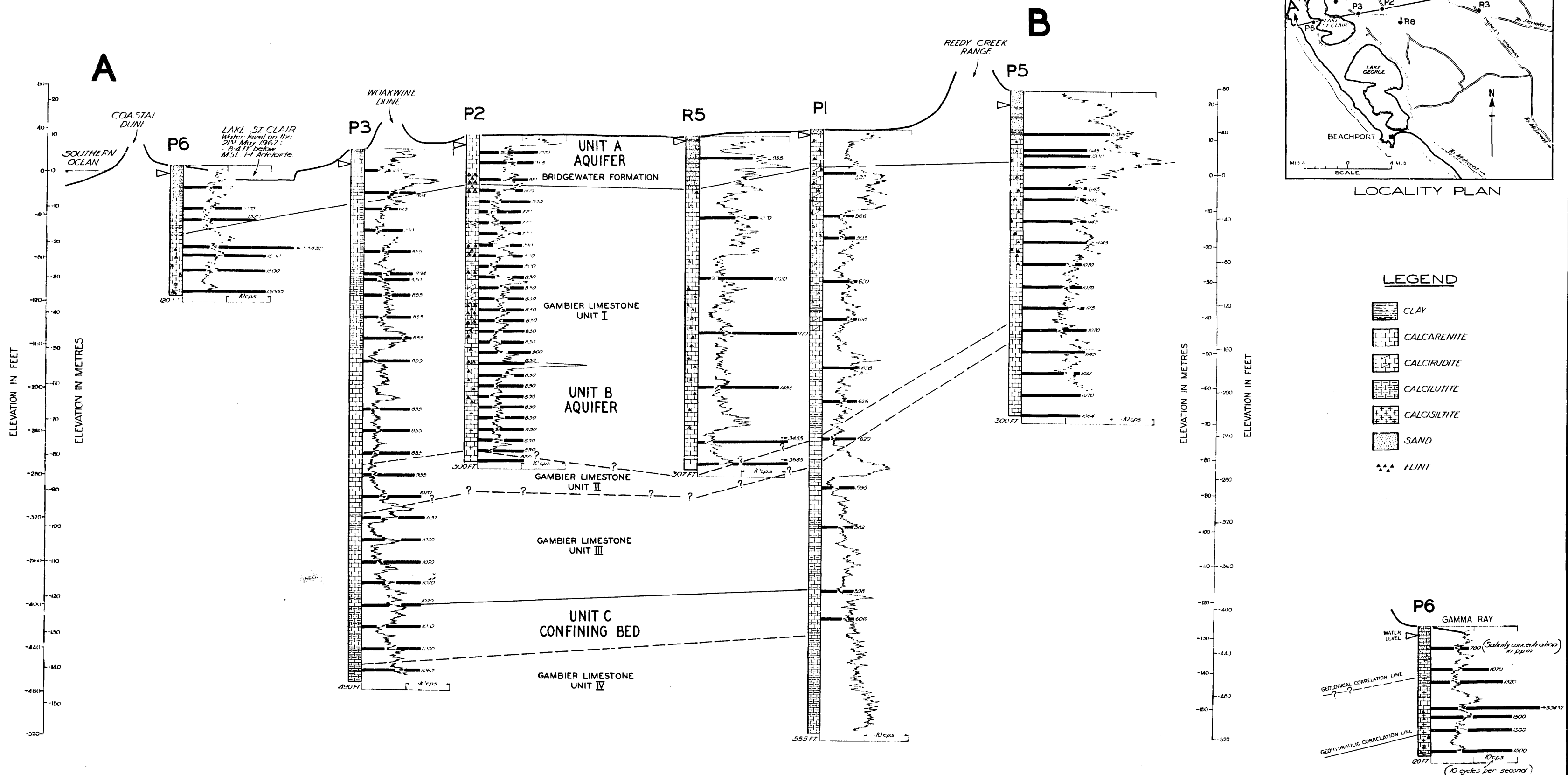
BASE PLAN COMPILED FROM DEPARTMENT OF LANDS
80 CHAIN SCALE HUNDRED PLANS

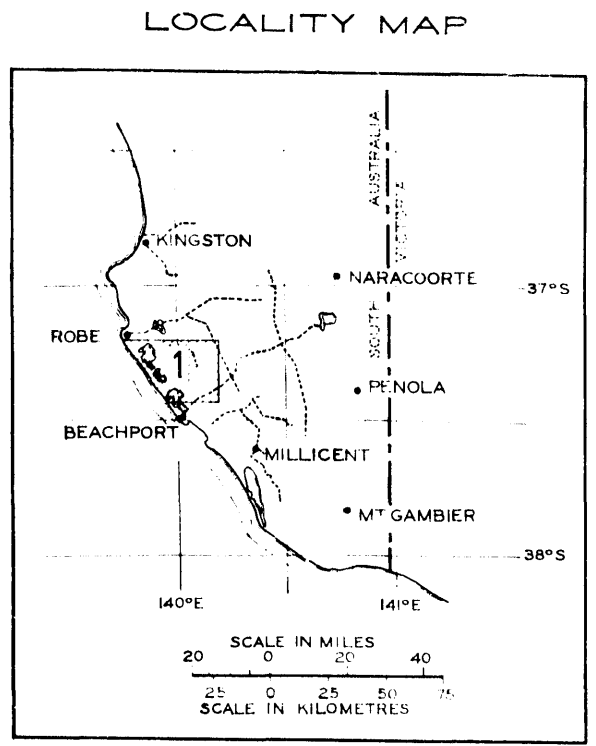
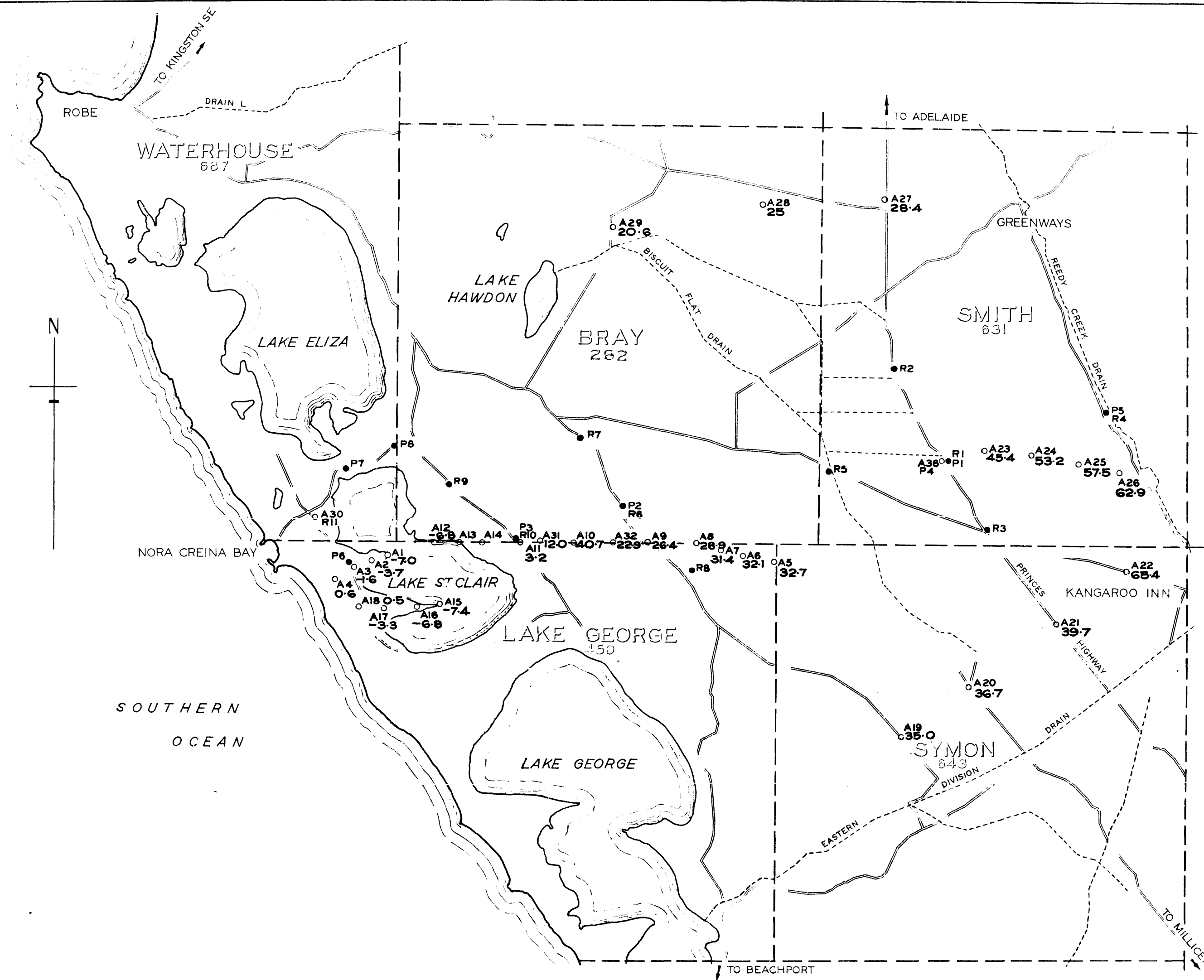
DEPARTMENT OF MINES - SOUTH AUSTRALIA

SOUTH-EAST WATER RESOURCES
TEST AREA I

GEOLOGY AND PHYSIOGRAPHY

PROJECTED BY GEOLOGY	D. J. Faulkner	DATE	27 Oct '69
SECTION	69-406	DATE	27 Oct '69
Director of Mines	DATE	27 Oct '69	





- LEGEND**
- Road
 - - - Drain
 - - - Hundred Boundary
 - SMITH 631 Hundred Name
 - A26 Borehole into UNIT A AQUIFER with programme number.
 - R3 Borehole into UNIT B AQUIFER with programme number.
 - 32.7 R.L. Groundwater Level.

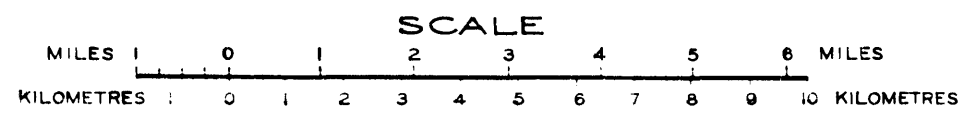


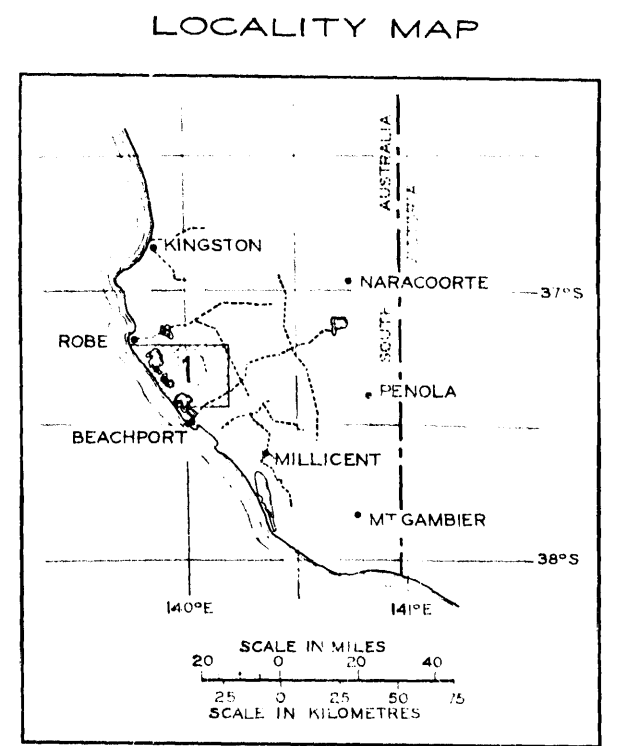
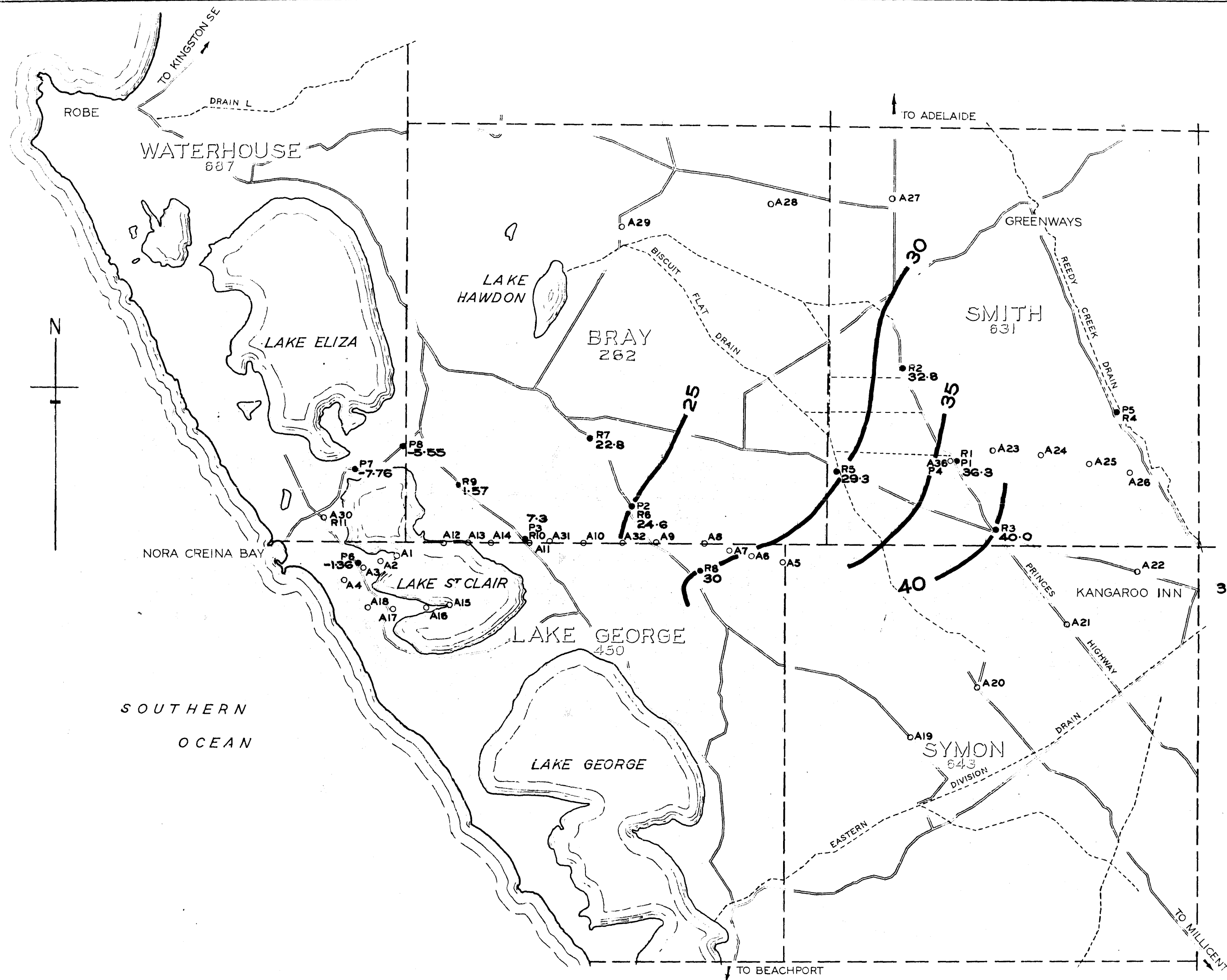
FIG: 4

BASE PLAN COMPILED FROM DEPARTMENT OF LANDS
80 CHAIN SCALE HUNDRED PLANS

DEPARTMENT OF MINES — SOUTH AUSTRALIA

**SOUTH-EAST WATER RESOURCES
TEST AREA I
GROUNDWATER LEVELS UNIT A**

UNIT GEOLOGY	Geology	Unit	Scale
SECTION	Geologist	Trd AMSD	69-408
Director of Mines	Geologist	End	DATE 27 Oct 69



- LEGEND**
- Road
 - - - Drain
 - - - Hundred Boundary
 - SMITH 631 Hundred Name
 - A26 Borehole into UNIT A AQUIFER with programme number.
 - R3 Borehole into UNIT B AQUIFER with programme number.
 - 40.0 R.L. Groundwater Level
 - 35 — Assumed Piezometric Surface.

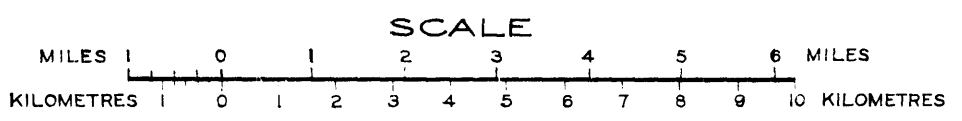


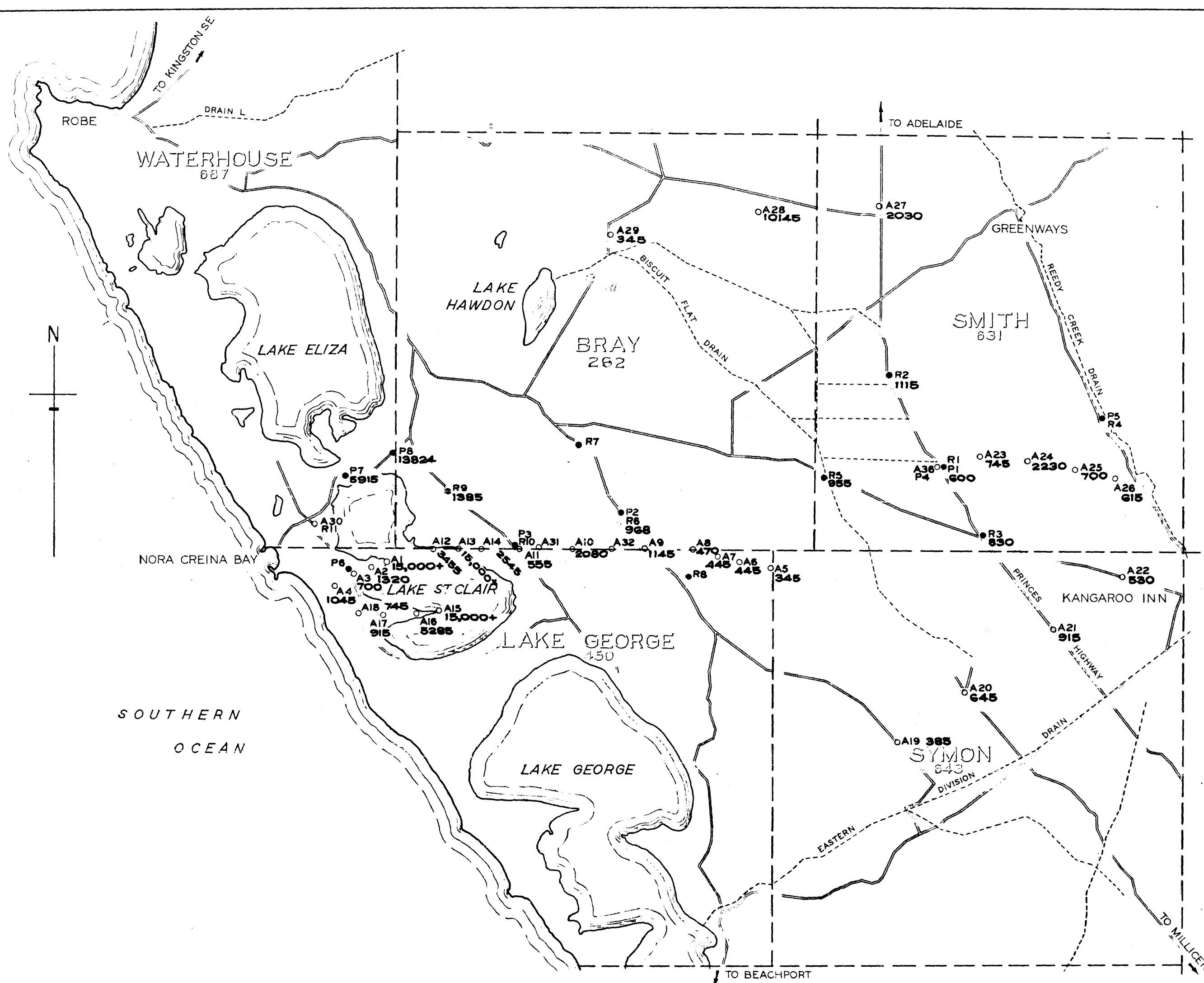
FIG:5

BASE PLAN COMPILED FROM DEPARTMENT OF LANDS
80 CHAIN SCALE HUNDRED PLANS.

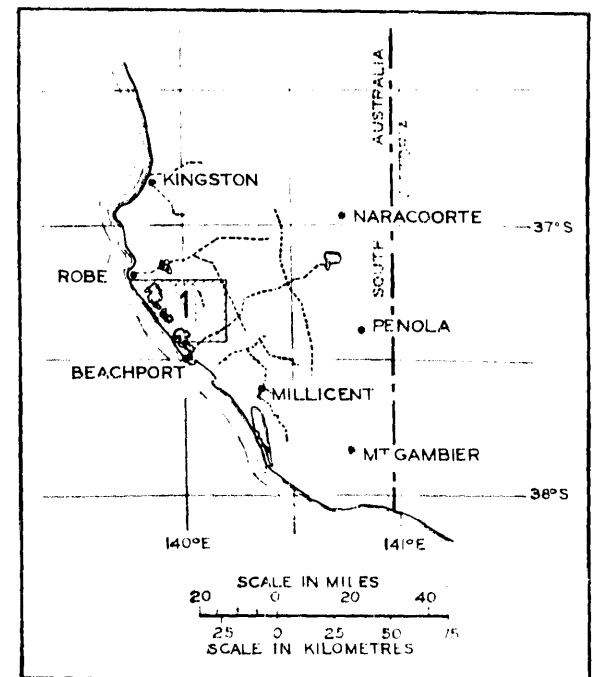
DEPARTMENT OF MINES — SOUTH AUSTRALIA

SOUTH-EAST WATER RESOURCES
TEST AREA I
GROUNDWATER LEVELS UNIT B

HYDROGEOLOGY SECTION	<i>J. J. J. J.</i>	Dr. I. F.	SCALE: AS SHOWN
	<i>T. J. J. J.</i>	Trd. AMFC	69-409
	<i>C. J. J. J.</i>	Chd. LVW.	Kde.
Director of Mines	GEN. GEOLOGIST	Enr.	DATE 27 Oct '69



LOCALITY MAP



LEGEND

- Road
- - - Drain
- - - Hundred Boundary
- SMITH 631 Hundred Name
- A28 Borehole into UNIT A AQUIFER with programme number.
- R3 Borehole into UNIT B AQUIFER with programme number.
- 530 Groundwater Salinity (p.p.m.)

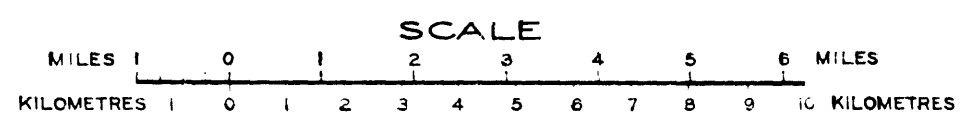


FIG: 6

BASE PLAN COMPILED FROM DEPARTMENT OF LANDS
80 CHAIN SCALE HUNDRED PLANS

DEPARTMENT OF MINES - SOUTH AUSTRALIA

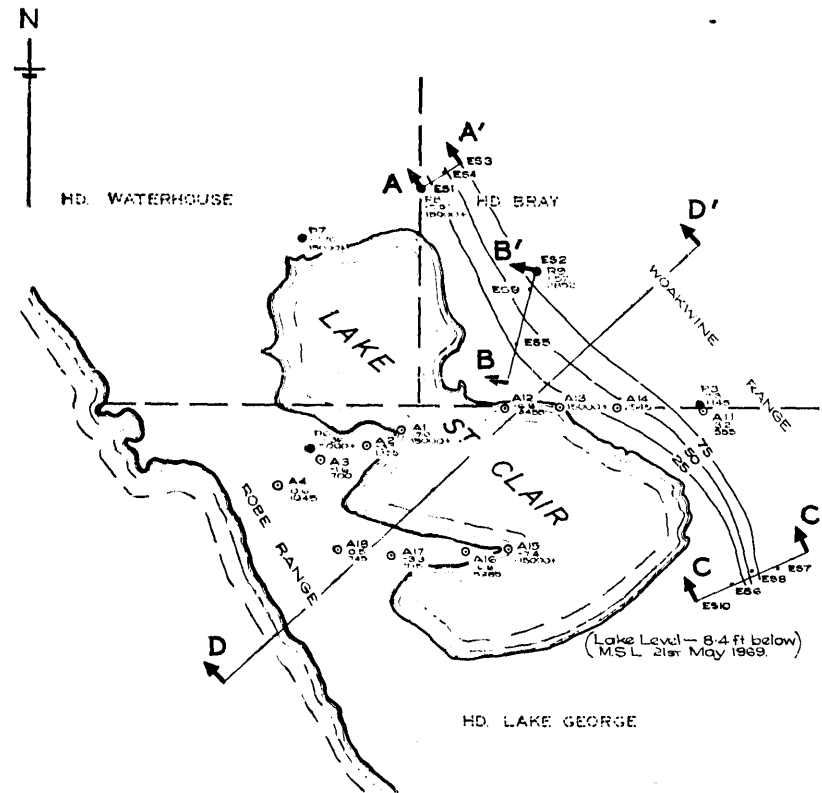
SOUTH-EAST WATER RESOURCES
TEST AREA I

GROUNDWATER SALINITIES UNIT A

HYDROGEOLOGY SECTION	9.9.1/10/11	Drn I.F.	SCALE: AS SHOWN
Director of Mines	GEOL. DIST.	Ed	DATE 27 Oct '68

69-410 Kde

LOCALITY PLAN



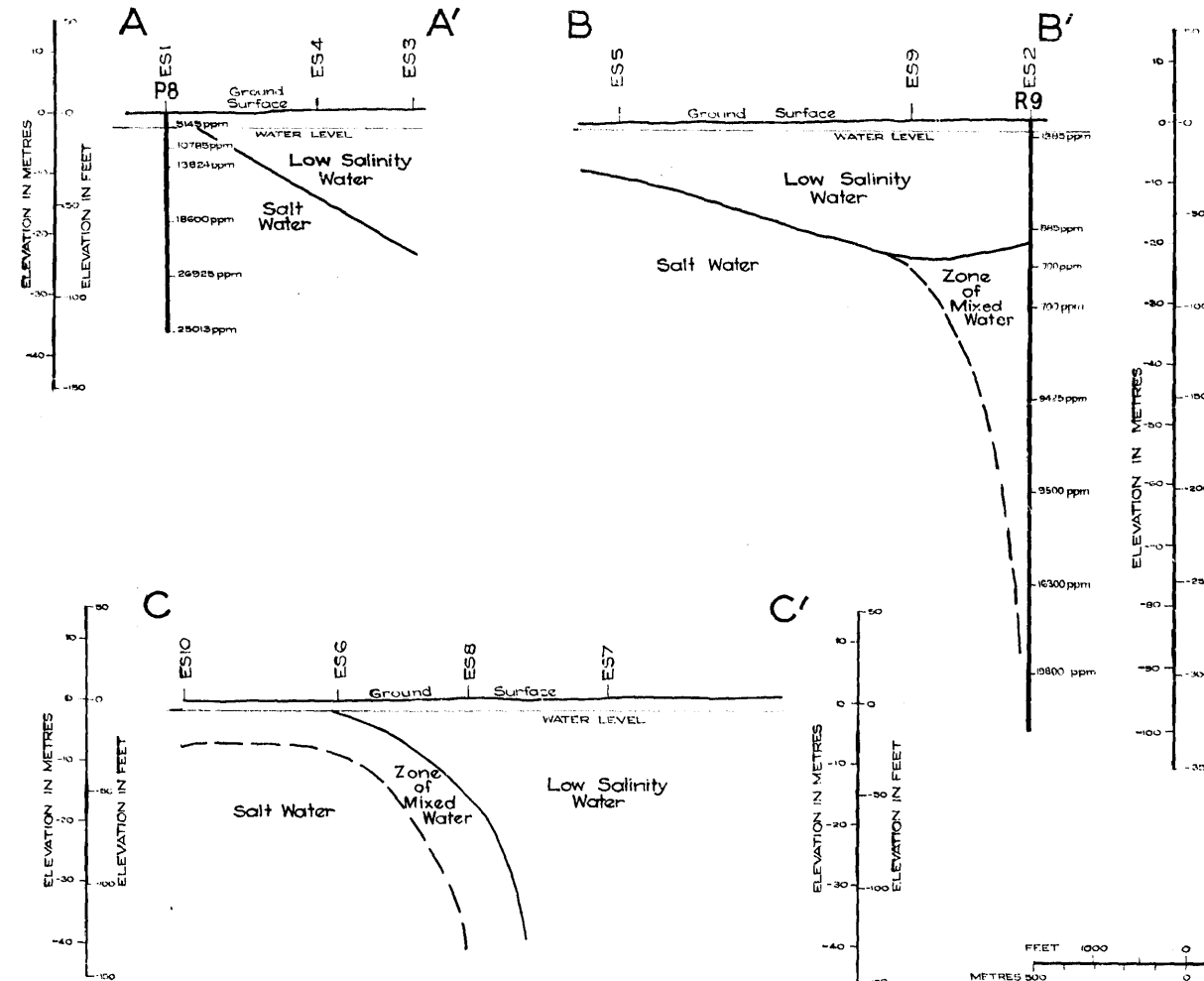
SCALE

MILES 0 1 2 3 4 5
KILOMETRES 0 1 2 3 4 5

LEGEND

- ES1 Ground Resistivity Depth Probe
- ES2 Borehole
- ES3 R.L. Groundwater (21st June 1969)
- ES4 Salinity
- 25 Contour of Salt Water - Groundwater Interface

CROSS SECTIONS



SCALE

FEET 0 1000 2000 3000
METRES 0 500 1000

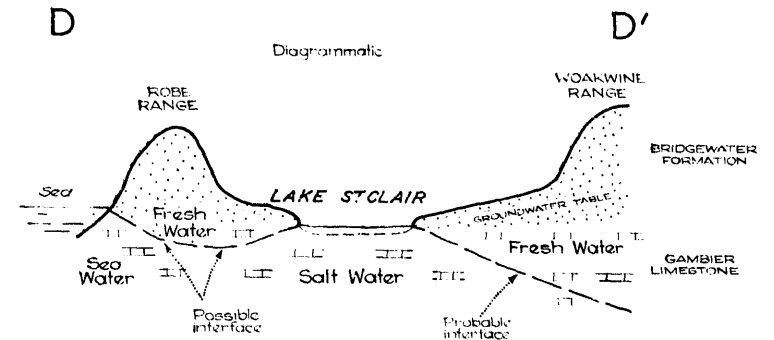


FIG: 8

DEPARTMENT OF MINES - SOUTH AUSTRALIA

SOUTH EAST WATER RESOURCES
GAMBIER PLAINS TEST AREA No. 1.
RESISTIVITY TRAVERSES, PLAN AND SECTIONS.

HYDROGEOLOGY SECTION	Drn. B.M.H.	SCALE: As Shown
	Tcd. AM+D	69-449
	Ckd. L.V.W.	Kdz
Director of Mines SENIOR GEOLOGIST	Ed.	DATE: 19 Aug '69