DEPARTMENT OF MINES
SOUTH AUSTRALIA
GEOLOGICAL SURVEY

THE HYDROLOGY OF THE MOUNT PLEASANT—ANGASTON AREA

by

E. P. O'Driscoll, Senior Geologist
R. I. Chugg, Geological Assistant

REPORT OF INVESTIGATIONS No. 14

Issued under the Authority of
The Hon. Sir A. Lyell McEwin, K.B.E., M.L.C., Minister of Mines

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PUBLICATIONS OF THE SOUTH AUSTRALIAN DEPARTMENT OF MINES AND GEOLOGICAL SURVEY

ANNUAL REPORTS OF THE DIRECTOR OF MINES AND GOVERNMENT GEOLOGIST

WARD, L. KEITH—
Annual Reports, 1912-1943 (issued as Parliamentary Papers).

DICKINSON, S. B.—
Annual Reports, 1944-1955 (issued as Parliamentary Papers).

GEOLOGICAL MAPS

Geological Map of South Australia, coloured ; scale, 32 miles to 1 inch. 1953.
Structural Geological Map of South Australia, coloured ; scale, 32 miles to 1 inch. 1953.
Regional Geological Maps (Military Sheets), coloured—
Scale 1 mile to 1 inch: Adelaide, Alexandrina, Algebuckina, Angepena, Anna, Arno, Ballara, Boorthanna, Cadlareena, Chandler, Conway, Copley, Corunna, Coulta Cowell, Cummins, Darke, Echunga, Ernabella, Farina, Gambier-Northumberland, Gawler, Giles, Glenorchy, Glynn, Indulkana, Jervis, Kalabity, Kapunda, Kiana, Kingston, Lincoln, Lyndhurst, Mannum, McGregor, Middleback, Myrtle, Neill, Nilpinna, Olary, Plumbago, Quorn, Robe, Roopena, Rudall, Serle, Sleaford, Tumby, Umbum, Verran, Yankalilla, Yeelanna. Wangary.
Scale, 4 miles to 1 inch : Kingscote, Penola, Lincoln.
All maps, price 2s. 6d. each.

REPORTS OF THE GEOLOGICAL SURVEY OF SOUTH AUSTRALIA

1. WARD, L. KEITH, and JACK, R. LOCKHART—
The Yelta and Paramatta Mines (with plans). 22nd March, 1912. Price, 3s. 6d.

2. JACK, R. LOCKHART—
The Mount Grainger Goldfield (with map). 25th June, 1913. Price, 3s. 6d.

3. WARD, L. KEITH, and JACK, R. LOCKHART—
The Yudnamutana Mining Field (with plans and map). 8th December, 1915. Price 3s. 6d.

BULLETINS OF THE GEOLOGICAL SURVEY OF SOUTH AUSTRALIA

1. JACK, R. LOCKHART—
The Geology of Portions of the Counties of Le Hunte, Robinson, and Dufferin, with special reference to Underground Water Supplies (with maps). 2nd September, 1912. Price 5s.

2. WARD, L. KEITH—
The Possibilities of the Discovery of Petroleum on Kangaroo Island and the Western Coast of Eyre's Peninsula (with maps). 24th January, 1913. (*Out of print*).

3. JACK, R. LOCKHART—
The Geology of the County of Jervois, and of portions of the Counties of Buxton and York, with special reference to Underground Water Supplies (with maps). 31st January, 1914. (*Out of print*).

4. WADE, ARTHUR—
The Supposed Oil-bearing Areas of South Australia (with maps). 24th February, 1915. (*Out of print*).

5. JACK, R. LOCKHART—
The Geology and Prospects of the Region to the South of the Musgrave Ranges, and the Geology of the Western Portion of the Great Australian Artesian Basin (with maps).
Also Appendices on "The Flora of the Country between Oodnadatta and the Musgrave and Everard Ranges", by Captain S. A. WHITE: and on "Results of Magnetic and Astronomical Observations", by G. F. DODWELL. 6th September, 1915. (*Out of print*)

6. JACK, R. LOCKHART—
The Geology of the Moonta and Wallaroo Mining District (with maps). 22nd May, 1917, (*Out of print*)

7. JACK, R. LOCKHART—
The Phosphate Deposits of South Australia. 19th May, 1919. (*Out of print*).

8. JACK, R. LOCKHART—
The Salt and Gypsum Resources of South Australia. 1st December, 1920. (*Out of print*).

9. JACK, R. LOCKHART—
The Iron Ore Resources of South Australia (with maps). 6th February, 1922. (*Out of print*).

10. JACK, R. LOCKHART—
The Building Stones of South Australia. 12th March, 1923. Price 5s.

11. JACK, R. LOCKHART—
Some Developments in Shallow Water Areas in the North-East of South Australia (with maps). 15th December, 1924. (*Out of print*).

12. JACK, R. LOCKHART—
Clay and Cement in South Australia. 17th May, 1926. (*Out of print*).

13. JACK, R. LOCKHART—
Pigment Minerals in South Australia. 26th March, 1928. Price 5s.

14. JACK, R. LOCKHART—
Geological Structure and other Factors in Relation to Underground Water Supply in Portions of South Australia (with maps). 13th May, 1930. (*Out of print*).

15. JACK, R. LOCKHART—
Report on the Geology of the Region to the North and North-West of Tarcoola (with map). 2nd February, 1931. (*Out of print*).

16. SEGNIT, RALPH W.—
Geology of the Northern Part, Hundred of Macclesfield, with special reference to its Economic Aspects (with map). 10th March, 1937. Price 5s.

17. SEGNIT, RALPH W., and DRIDAN, J. R.—
Geology and Development of Ground Water in the Robinson Fresh Water Basin, Eyre's Peninsula (with map). 30th November, 1937. Price 5s.

18. SEGNIT, RALPH W.—
The Pre-Cambrian—Cambrian Succession. The General and Economic Geology of these systems in portions of South Australia (with maps). 26th October, 1938. Price 7s. 6d.

19. WARD, L. KEITH—
The Underground Water of the South-Eastern Part of South Australia (with maps). 28th December, 1940. Price 5s.

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GEOLOGICAL SURVEY OF SOUTH AUSTRALIA

REPORT OF INVESTIGATIONS

NO. 14

HYDROLOGY OF THE MOUNT PLEASANT ANGASTON AREA

by

E. P. O'DRISCOLL, B.E., A.I.M.E. (AUST.)

Senior Geologist

and

R. I. CHUGG

Geological Assistant

Letter of Transmittal

Geological Survey Office,
Department of Mines,
Adelaide, 30th September, 1958.

Sir,

I have the honour to submit herewith for publication, a report on the groundwater resources of the Mount Pleasant-Angaston district by E.P.D.O'Driscoll, B.E., Senior Geologist and R. I. Chugg, Geological Assistant.

The provision of an adequate water supply for the township of Mount Pleasant has been under consideration for many years. Lack of suitable sites, together with small potential catchment areas, precluded the construction of surface dams. About eleven years ago, an assessment of the potential groundwater resources of Mount Pleasant was commenced by the Geological Survey, and has since been extended to include nearby townships and some of the adjoining farming land extending to Angaston.

The area which this report describes includes parts of the Hundreds of Moorooroo, Jellicoe, Jutland and Talunga. Most of this hills district has an adequate rainfall, and groundwater resources sufficient for small scale development down to individual farm requirements was anticipated.

The report includes detailed records of a large number of bores and wells. These, supplemented by the geological data presented, are a valuable record, and will be of great assistance to land holders and towns-people alike, meeting their several requirements of water from underground sources.

I am, Yours faithfully,

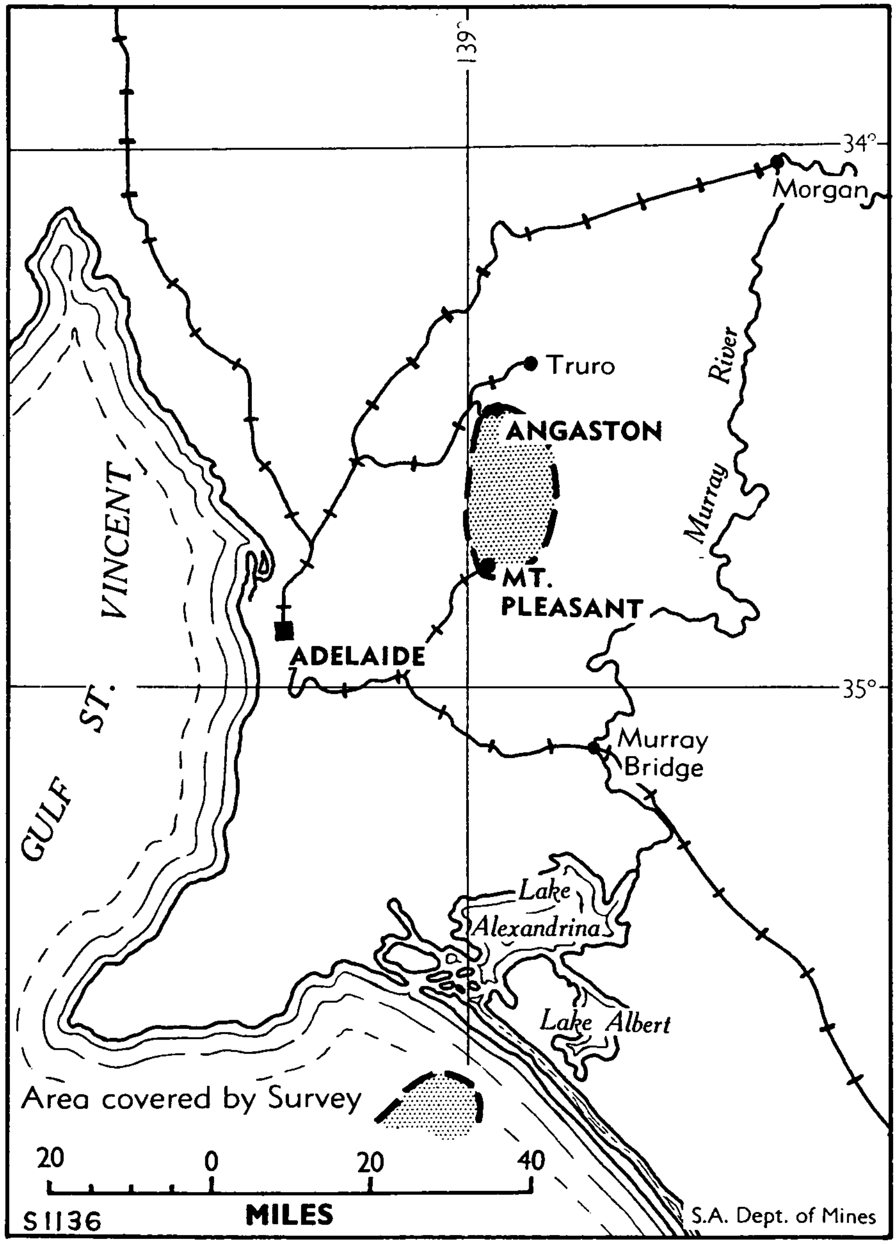
T. A. BARNES
Director of Mines

The Hon. Sir A. Lyell McEwin K.B.E, M.L.C. Minister of Mines.

Submitted for approval to print as a Report of Investigation of the Geological Survey of South Australia.

Approved.

A. LYELL McEWIN
Minister of Mines



LOCALITY PLAN

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HYDROLOGY OF THE MOUNT PLEASANT ANGASTON AREA

Summary

The purpose of this survey was to determine whether groundwater could be developed as a source of domestic supply for the townships of Eden Valley, Springton and Mount Pleasant, and for stock supplies on farmlands between Mount Pleasant and Angaston.

The district is one of moderately good and reliable rainfall, and groundwater occurs almost everywhere in sufficient supply and of a quality suitable for general stock purposes other than dairy cattle. As regards dairy cattle, the Department of Agriculture has advised that a salinity of about 150 grains is the maximum that should be tolerated for watering milch cows, the maximum for dry cattle being approximately 300 grains per gallon.

In several places, the most important being round Eden Valley itself, the groundwater salinity is higher than the maximum recommended for dry dairy cattle, and there are probably some properties where better quality water would be obtainable only from excavated earth tanks.

Only on about one third of the whole district is water suitable for milch cows known to be obtainable, although individual properties outside the main areas of such occurrence may also have water available at selected sites.

The township of Springton could probably have its present domestic requirements supplied from groundwater sources nearby, either existing or to be constructed, provided that water of 100 grains per gallon maximum were acceptable. This is rather high for ordinary domestic use, and if much future development occurred, demand might exceed the supply. The existing bore three quarters of a mile from the town offers the best known source of water, but its acquisition would probably involve considerable expense.

For Eden Valley and Mount Pleasant, groundwater does not appear to be a satisfactory source of domestic and garden water.

Introduction

This survey has been undertaken by the Department of Mines following upon representations to the Government from various sources asking that the possibility of supplying water to Mount Pleasant, Springton, Eden Valley and surrounding farmlands be investigated. Field work was commenced in August 1954 and continued intermittently until August 1955.

The area examined covers the major portion of the Hundred of Jutland, substantial parts of the Hundreds of Moorooroo and Jellicoe, and parts of the Hundreds of Para Wirra and Talunga. It includes lands occupied by petitioners in the north, and covers a strip some three to four miles in width on each side of the suggested pipeline north of Mt. Pleasant.

Purposes of the survey have been twofold: to determine the availability of stock water on the farmlands which would be served by a branch pipeline from the Mannum-Adelaide Main, and to assess the possibilities of providing a town supply from local groundwater sources near Springton and Eden Valley.

The Mount Pleasant township has already been the subject of a groundwater survey and report. (See below)

Acknowledgments

The northern portion around Angaston has been the subject of a fairly detailed geological investigation by J. D. Campbell (Chief Geologist, Western Mining Corporation), for I.C.I. Alkali (Aust) Pty. Ltd., while the central and southern portions of the area have been mapped by the Department of Geology, University of Adelaide. On the western side, the Regional Mapping Section of the Department of Mines have covered the adjoining Gawler Military Sheet. These geological maps have proved extremely useful in the present work, and with some modifications are in part reproduced herewith.

In 1939 Mr. R. W. Segnit, then Assistant Government Geologist, made a detailed investigation of groundwater and geological conditions around Mount Pleasant township, and reported that he did not consider any site existed within economic distance, on which the drilling of a bore capable of providing a continuous township supply would be possible. He suggested that it might be possible to utilise an existing bore on "Rosebank", several miles away, but estimates since prepared show that it would be cheaper (and of course more satisfactory) to construct a spur main to Mt. Pleasant from the Mannum-Adelaide main, rather than utilise this bore.

Geography and Topography

Extending from Angaston in the extreme north to Mount Pleasant township in the south, the area is roughly 19 miles in length and eight miles in width. It forms part of a platform bounded on the west by higher country along the scarp of the Brewer Fault, the eastern margin being the steep declivity caused by the Palmer Fault, with the edge of the Murray Basin plain several hundred feet below.

West of Craneford the range attains a height of over 1900 feet above sea level, while Mount Pleasant Trig Station in the south is 1777 feet.

Elsewhere the land surface, although undulating to hilly, lies in general between the 1200 and 1500 ft. contours, except where the major watercourses have incised their channels to below the 1000 ft. level.

Consequent upon the variable topographic relief, and the existence of high country on the western flank from which direction most of the weather changes come, the rainfall varies quite markedly within comparatively short distances.

However, it is in excess of 20 inches per annum over the whole area, and in some places is considerably more as will be seen from the included tables. (See Table VI)

Most of the rain falls in the winter, the period from January to March being fairly dry, so that excavated earth tanks, unless of considerable capacity, cannot be regarded as certain sources of stock water.

The drainage pattern reflects the general north-south topographic trend. Rising along a small watershed near Craneford, Flaxman's Valley Creek and the smaller Tanunda Creek flow north towards Angaston, while four to five miles to the eastward the Somme River flows south to its junction with the Marne. The Marne River itself flows east, and together with Saunders Creek drains the central and southern parts of the area, which the exception of the country in the vicinity of Mount Pleasant, the runoff from which flows southwest into the Torrens River. These watercourses do not flow in summer, but permanent waterholes occur from which stock can, in most cases, be supplied. A possible exception is the Somme in dry seasons, waters from which have at times proved to be too saline even for sheep. However, although the valleys are still generally only in a partly mature stage, there is usually some thickness of alluvium and weathered rock into which wells may be dug to obtain stock water.

Except on the extreme eastern and western margins, where because of steep slopes, poor soil, or the rocky nature of the surface, there has been little attempt at development, the lands have been cleared and sown to pastures. These act as an effective retardant to surface runoff and probably increase the downward percolation of rainwater to a noticeable extent. Subject to geological considerations therefore, conditions for the accumulation of groundwater are reasonably favourable.

Geology

Two main rock types occur, consisting of metamorphosed sediments of the early Palaeozoic Era, principally of the Kanmantoo Group, and granitic rocks with associated migmatites and a few amphibolites. In the central and southern parts these granitic rocks form a core trending slightly west and north along the general strike of the sediments on either side, and their occurrence has a bearing on the groundwater prospects in their vicinity.

The metamorphosed sediments comprise micaceous and often quite soft, very sandy schists, micaceous sandstones and quartzites, and a marble-bearing horizon consisting mainly of a calcareous sandy schist with marble lenses. These three subdivisions have been referred to by the University School of Geology as the Eden Valley schists, the Pine Hut formation, and the Angaston Marble formation respectively. In the accompanying map the former two have been grouped together.

The basement rocks are in places concealed by soil or alluvium, and sometimes by a thin and very intermittent capping of Tertiary laterite, which latter however has no great significance from a groundwater viewpoint.

There is evidence of faulting, and detailed work by others in the adjacent areas covered by the Mannum and Gawler Sheets, indicates the probability of this being much more extensive than shown on the accompanying geological map, which must be regarded as a generalised one. This faulting, associated as it probably is with the marked flexure of the metamorphosed sediments and with the occurrence of granitic material, has in some measure exercised an influence on groundwater conditions, but in a general rather than a particularised manner. Fault zones are not readily discernable and it would be unwise to regard them as likely and easily chosen areas where drilling could be expected to yield large supplies. The strong folding along a line west of north has resulted in the different rock types outcropping in zones along the strike, in which groundwater conditions, although in a large measure governed by topographic and other factors, appear to vary.

Hydrology

Records have been made of approximately 440 wells and bores in the district, of which only a very small proportion have failed to obtain stock water, failure in some instances being the result of drilling to insufficient depth. The term "stock water" is here used to mean water of a maximum of 550 grains per gallon salinity, suitable for normal stock purposes. Dairy cattle, especially milch cows, require better quality water than other stock, and for them this limit is too high.

Twenty eight bores (approximately 6½ per cent of the total) are reported by their owners to have obtained yields of 2000 gallons per hour or more; and of these, four contain only stock quality water and a further six yield water of over 100 grains per gallon. On the above figures, only 24 bores (5½ per cent) could be classed as useful for any pasture irrigation purposes, and eighteen (4 per cent) for domestic use in any proposed township supply. This must not be taken to imply that further drilling near townships is unwarranted, but emphasizes the comparatively small percentage of bores throughout the area which have obtained supplies which could be considered of any use for town purposes. Although scattered on almost the whole area, these good bores tend to occur in groups, at places where suitable conditions such as favourable rock type, intake and recharge etc. occur in conjunction.

The least favourable rock type is the granitic series. Their dense crystalline character and lack of jointing precludes the occurrence of water in unweathered rock masses. Where a sufficient thickness of soft weathered rock exists to permit of the ingress of rainwater runoff, soluble salts occur which render the groundwater unsuitable for other than stock purposes. Stock water is obtainable at selected sites on granitic areas but these must be carefully chosen with a regard to geological conditions, and are usually confined to gullies where intake conditions are at their best, and the zone of weathering is deepest. It is possible that on a few individual sections an adequate stock supply would not be obtainable by drilling, although requirements might be met in part by natural springs and soakages, which sometimes occur. In most cases, water should be obtainable for stock provided sufficient regard is paid to geological conditions when bore sites are selected.

Of the metamorphosed sediments, the quartzites and sandstones generally yield supplies of only stock quality water. This is evident particularly in the area around the township of Eden Valley, where except in a very few instances the groundwater salinity varies within the range of 150-550 grains per gallon of dissolved salts. Most of the bores have yielded water too saline for milch cows, although suitable for other stock, and there appears to be little chance of obtaining a township water supply by drilling in the vicinity of the town itself.

The micaceous sandy schists are more satisfactory, and except in unusual circumstances yield water suitable for dry cows, and often for domestic purposes. Supplies are not large as a rule, but several bores exist having a yield of over 2000 gallons per hour.

The Angaston Marble series, including the calcareous sandy schists associated with the actual marble beds, are excellent rocks for obtaining good quality water, wherever the rainfall is reasonably high. South of Angaston itself there is a small area very well watered from bores and wells, almost all with water containing less than 100 grains per gallon of salts, and often in reasonably large supply. This and a small tract around Springton appear to be the better parts of the area under consideration. On the eastern margin, where rainfall is less, the marble series has been drilled with variable results both as regards quality and supply.

In all districts, a surprising proportion of the best quality waters has been obtained by well sinking, attributable mainly to the circumstance that wells are usually sited on or near to watercourses and gullies, where the groundwater occurs in shallow alluvium or soil, and where replenishment conditions are most favourable. In very few instances have well waters proved too saline for milch cows, although supplies are sometimes limited. Many bore sites, on the other hand, have been chosen having regard to farm subdivision rather than geological or topographical conditions, and since they obtain water from the underlying bedrock rather than from shallow alluvium and soil, the salinities are higher. Except in two known instances, all supplies of 2000 gallons per hour or more of water suitable for lucerne have been obtained from bores, and not wells.

Water suitable for milch cows appears to occur mainly in four localities, as shown on Plate IV. Their combined area is no more than one third of the total, but there are some individual properties elsewhere, where water for milch cows occurs, or would be obtainable at selected sites.

There are three main areas where groundwater is too saline for dry dairy cows, though not other stock. These are

(a) the watershed lying west of Mount Pleasant and Springton, approximately along the common boundary of the Hundred of Para Wirra with the Hundreds of Talunga and Jutland.

(b) a small area two to two and a half miles northeast of Springton, also forming a local watershed.

(c) a fairly extensive tract east and north of Eden Valley, with an extension westward along the high country at the boundary between the Hundreds of Moorooroo and Jutland.

Of the three, the last mentioned is the most extensive and important, as it would affect the farming economy of a number of properties.

Township Supplies

Mount Pleasant

As stated in the acknowledgements above, this has previously been the subject of an investigation by Mr. R. W. Segnit who reported unfavourably on the groundwater prospects. The present writers have re-examined the position, and see no reason to disagree with Mr. Segnit. No site can be chosen on which drilling could be recommended apart from the Triangle

Flat area, which has been rejected previously, and the only reasonable source of supply for Mount Pleasant appears to be from the Mannum-Adelaide main.

Springton

Excepting for a small area immediately south of the township, where stock quality waters are associated with minor granitic intrusions, all the wells and bores in the vicinity yield water containing less than 100 grains per gallon. In bores, as distinct from wells, the quality varies between the limits of 49 and 97 grains per gallon, the best water being in a bore on Section 616 Hundred Jutland, owned by Herbig Bros. This is also the largest known supply in the whole district, being reported to be 6000 gallons per hour. However, the quality is rather exceptional, another bore not far downstream in the same valley yielding 95 grain water.

Possibly because of the relatively good water, the Springton area has been fairly well developed by bores and wells, and provided a maximum salinity limit of 100 grains per gallon were regarded as acceptable, it is probable that sufficient groundwater for present township requirements could be obtained by utilising existing bores, some of which might need deepening, and by augmenting these from one or two new ones.

It is believed that sites for such new bores could be chosen, those suggested being the road reserves between sections 601 and 602, and between 616 and 618.

Individual yields anticipated could be of the order of 1500 to 2000 gallons per hour.

However, there are considerations which reduce the attractiveness of such a proposal.

(a) The possibility of the groundwater being contaminated from domestic or animal sources, except in the case of the site near Section 618, must not be overlooked. If this occurred, chlorination of the water supply might be necessary.

(b) The cost of connecting up and pumping from several bores, each with a supply of probably less than 2000 gallons per hour, would be high.

(c) Continuous pumping from bores near the township could be expected in time to reduce the overall supply available, and the yields of the bores might decline.

(d) If sewerage were installed or if a milk processing plant were built, requirements would increase, and might in time exceed the maximum quantity obtainable from nearby groundwater sources.

An alternative which suggests itself is that (subject to a satisfactory pump test) the bore belonging to Herbig Brothers on Section 616 Hundred of Jutland be purchased together with the surrounding land. This bore is some three quarters of a mile southeast of the township, and appears to offer more attractive possibilities than any scheme for connecting up several others, existing or proposed. The land is valuable, and initial outlay on such a purchase would be high.

Summarizing the above, it is considered that present township requirements at Springton could be met by drawing on all available groundwater resources, but the supply might not be sufficient to meet possible increased future demands, and costs would probably be high.

Eden Valley

Eden Valley is in an area where local groundwaters are of poor quality, unsuitable for domestic use. The nearest possible source of water is considered to be the Marne River valley some one and a half to two miles south, but even there groundwater of high quality cannot definitely be assured. The Marne River is not permanent, drying out to a series of waterholes in summer which, within a known distance of two to three miles east of Eden Valley, become brackish. They are reportedly of good summer quality west of the main Springton - Eden Valley road, and subject to confirmation of this by analysis in dry years, the possibility of constructing a low weir on the Marne, from which a township supply could be pumped, might repay investigation. In the opinion of the writers, a project for meeting present and possible future township requirements from groundwater sources would be expensive, and not assured of success.

Conclusions

The whole area has been fairly extensively developed by bores and wells, augmented by excavated earth tanks, and is reasonably well supplied with water of a quality suitable for general stock purposes. About a third of the district has groundwater suitable for milch cows, while another sixth or so is country in which water for milch cows appears unlikely to occur at all.

Over the remainder, most of the recorded bores yield water of a salinity varying between 150 to 300 grains per gallon, and it is considered that better quality water would only be obtainable by careful site selection for future drilling. Even then, probably not all properties could obtain water for milking cows.

With the exception of waterholes in some of the rivers during summer, (notably the Somme) practically all recorded surface waters are considered suitable for sheep and beef cattle.

Rainfall is reasonably reliable, and in some cases the construction of excavated earth tanks appears to be an alternative source of water.

In general, the groundwater resources appear capable of considerable further development by drilling for general stock purposes, but there are some properties on which it may not be possible to obtain water for dairy cattle.

Springton is the only one of the three townships, the present domestic requirements of which could probably be met from groundwater sources, and such a project cannot unreservedly be recommended. Moreover, future development may result in demand exceeding the supply available.

Except in a few isolated instances, groundwater for the irrigation of pastures and crops is not obtainable.
(29/9/55).

Table No. 1

Hundred MOOROOROO

SUMMARY OF BORE RECORDS

Ground Water Survey

County LIGHT

BORE	SECTION	DEPTH in feet below surface			SUPPLY	SALINITY		HEIGHT above sea level	Strata passed through	Remarks
		Total	Water cut	Static level	Gallons per hour	Grains per gallon	Analysis No.			
1	113	160		55	2000+		-		Penetrated quartzite	
2	421	20				66	W1556/55		Phyllite	Well
3	380	18			good	106	W 376/51			Well
3A	380	190	70,160, 170	50	800	128	W 375/51			
4	323	85		60	Not tested	165	W 136/51			
5	332	105	70	4 (varies)	1000	92			Hard blue rock. Micaceous schist at bottom	Analyses by Horwood Bagshaw
6	332	120			1900	105			Clay and rock at top. Micaceous schist at 40 feet and on to 120 feet	Well abandoned
7	346	shallow			small					Well
8	346	shallow			small					
9	427	98	73,99	52	4000	37			0-2 Black soil; 2-10 Yellow clay; 10-14 Yellow sandstone; 14-54 Mixture of grey and red sandstone; 54-98 Grey sandstone. Marble outcrop nearby	
10	426	61½		25		79	W1069/55		Kanmantoo schists	Well
11	426	90	(1) 35 (2) 70 (3) 90	20 varies	(2) 2000 (3) 2400	103	W1073/55			Well to 20 feet
12	345	40				16	W1555/55		Clay and gravel	Well
13	338	94			150				Schists-very soft below 30 feet kept falling in	
14	338	142			200					Abandoned bore
15	338	141½	30,46, 65,88	10	500	44	W1228/55		Schists and some quartzite	
16	330	129	28,60, 84,129	flows	3500	57	W1255/55		Amphibolite dolerite (?)	
17	328	100	60-80							Abandoned well
18	427	33		15	300	76	W1072/55		Kanmantoo schists - tightly folded	
19	426	265	70		300	85.2	1941			
20	428	30		20	1000 per day	59	W1070/55		Meta-sediments	Well
21	428	90	24	24	3500	62	W1071/55		Red clay at top, water struck in dark medium grained well jointed sandy meta-sediments "Dolerite"	
22	428	18			100+					Well
23	429	110			3000	107	W1226/55			
24	339	50		17	good	33	W1227/55			Well timbered to bottom
25	339	125							Limestone on surface, gravels and sand with rock at 100 feet no marble penetrated	
26	428	79			2000	39.3	E. & W.S. 11.11.46		Hard red sandy rock at 60 feet	
27	428	34½			100+					Well and bore
28	430	117	55-98	38	1600				Water cut in quartz and soft sandstone at 55-98 feet. Very soft after 98 feet and no additional water	Said to have been considered for town supply
29	339	80			"very good"	22	W1213/55		Penetrated marble	
30	339	74		12-40	7000	34	W1076/55		0-23 clay with soakage 23-74 white marble	Well and bore 7 hour pump test
31	506	75		18	300+	30	W1212/55			Well and bore
32	430	98		12	700				Water cut in quartz	
33	682	150	62,50		400					
34	682	shallow		12	good	100	W1243/55			
35	430	82			500+	99	W1210/55			Well and bore
36	506	75		60	fair	55	W1214/55		No marble penetrated but near outcrop	Well
37	506								Sands gravels and clays. Marble at 35 feet	Well fallen in Abandoned
38	506	140			dry		-		Penetrated only soft silt but near marble outcrop	Abandoned
38A	506	60		45		289	W1224/55		Grey-green silt gravel at bottom but may be silt	Well
39	506	107	94		1500	26	W1075/55		Gravel at 95 feet then soft clay with hard ironstone at bottom. Nearby marbles not penetrated	
40	431	37		shallow	fair	110	W1221/55		Fine micaceous, sandstone	Well
41	431	35			fair	137	W1239/55			Well
41A	431	75			good	104	W1222/55		Some marble penetrated	

Table No. 1

Hundred MOOROOROO

SUMMARY OF BORE RECORDS

Ground Water Survey

County LIGHT

BORE	SECTION	DEPTH in feet below surface			SUPPLY	SALINITY		HEIGHT above sea level	Strata passed through	Remarks
		Total	Water cut	Static level	Gallons per hour	Grains per gallon	Analysis No.			
42	351	196	180	80	1500	47	W 348/55			
43	351	shallow			small		"good"			
44	357	200+				207'	W 533/55			
45	87	76		60?					Fine sandy meta-sediments	Yalumba
46	87	76				176			Fine sandy meta-sediments	Aral
47	506	50	25,48	25	900	37	W2642/52		0-5'6" Dark chocolate loam; 5'6"-21 marble boulders; 21-26 fairly soft limestone, 26-34 hard marble; 34-40 marble and clay; 40-47 marble, limestone and clay; 47-50 limestone, gravel and water	
48	557	78			2300	65	W1197/55		Fine micaceous sandstone	
49	344	30		25	small	37	W1236/55		Well in slate and fine micaceous sandstone	
50	87	60			small	460	W1246/55			
51	433	50			6000	71.7			Horwood Bagshaw log. 0-2 Brown soil; 2-7 red clay; 7-50 marble	Horwood Bagshaw bore
52	433	85		2					Horwood Bagshaw log. 0-5 Black soil; 5-12 white clay; 12-32 fine sand; 32-85 grey micaceous rock	Horwood Bagshaw bore
53	432	102	95	88	320+				0-20 Red clay; 20-46 brown clay; 46-55 blue stone; 55-95 yellow sandstone 95-100 gravel, 100-102 yellow sandstone	
54	87	58		8	poor	21	W1242/55		Well in decomposed sandy schist	
55	88	174			small	146	W1211/55		Kanmantoo schists	Bore
56	88	shallow			small	101	W1245/55		Kanmantoo schists	Well
56A	88	100+		dry						
57	507	335	63		900	165	W1215/55		0-2 Surface soil; 2-7 yellow micaceous rock; 7-13 black micaceous rock; 13-15 yellow sandstone; 15-49 grey micaceous rock; 49-52 yellow micaceous rock; 52-62 grey micaceous rock; 62-65 yellow micaceous rock; 65-101 grey micaceous rock; 101-112 grey sandstone; 112-116 light grey sandstone; 116-157 light grey micaceous rock; 157-163 grey sandstone; 163-251 grey micaceous rock; 251-261 grey sandstone; 261-311 grey micaceous rock; 311-316 light brown sandstone; 316-335 grey micaceous rock	
58	344	275	210,275	75	1700	244	W1223/55		"Very hard blue sandstone"	
59	414	102	29,39	33	500	90.07	W1979/52		0-2 light sandy loam; 2-10 brownish yellow sandy clay; 10-20 yellow clay; 20-25 reddish brown-clay; 25-28 sloppy yellow clay and some gravel; 28-42'6" yellow clay and gravel; 42'6"-54 white clay, gravel containing quartz, pyrites and a greenish quartz stone; 54-57 whitish grey clay and small gravel; 57-58 blue clay; 58-62 whitish grey clay and sand or small gravel; 62-89'6" whitish grey clay and small gravel and some pyrites; 89'6"-101'6" limonite with greater proportion of pyrites and pieces of tourmaline; 101'6"-102 whitish grey clay and pieces of opalised stone, fragments of blue marble	
60	781	60		40	poor	344	W1244/55			Well
61	434	50			less than 100	103	W1207/55			South Well
62	434	50		shallow	200+	75	W1208/55		Alluvium and fine grained schists	
63	434	35		shallow	poor					Well
64	410	40		25		3	W1553/55			Well with overflow from rain tank
65	389	25		8	300				Creek gravels	Well and spring, permanent through drought
66	347	100	42		small	35	W1204/55		Fine grained schists	
67	410	90		50	300	84	W 562/51			Well and bore
69	395	25		17		189	W 68/55			
70	360	118½	110-118	20	665	57.42	W1978/52		0-6" Grey loam top soil; 6"-6' mica schist and slatey gravel; 6-17 micaceous schist; 17-28'6" hard schist; 28'6"-34'6" mixture of schist, shale, quartz and gneiss; 34'6"-38' hard schist; 32-51'9" hard schist with narrow bands of grey shale; 51'9"-60 schist with larger bands of shale; 60-83'6" decomposed schist and light grey shale; 83'6"-89'6" light grey shale with fragments of schist; 89'6"-99 light grey clay 99-99'9" dark sand; 99'9"-109 light grey shale; 109-118'6" hard schist	
71	514	shallow		1	small	19	W1237/55		Alluvium	Well
72	515	10		Surface	small	9	W1240/55			Well
73	513	30		Surface		179	W1232/55		Alluvium	Well
74	399	225	62	27	170	130.22	5555		0-62 Micaceous schist; 62-105 fine grained micaceous quartzite; 105-138 schistose fine grained micaceous quartzite; 138-182 micaceous schist; 182-225 sandy micaceous schist	
75	692	95	50,80	50	600+	95	W 201/50		Hand micaceous schists	
76	516	10		1	small	12	W1234/55			Well

Table No. 1

SUMMARY OF BORE RECORDS

Ground Water Survey

Hundred MOOROOROO

County LIGHT

BORE	SECTION	DEPTH in feet below surface: Total	Water-cut	Static level	SUPPLY Gallons per hour	SALINITY Grains per gallon	Analysis No.	HEIGHT above sea level	Strata passed through	Remarks
77	516	140		20	small	28	W1238/55			
78	515	16		5	small	14	W1202/55		Schist	
79	448	shallow		2	small	177	W1206/55		Alluvium	Well
80	95	26		shallow	256	187	W 64/55		Alluvium	Well
81	95	18		shallow	2000	106	W 56/55		Alluvium	Well
82	96	15		11		145	W 63/55			Well by road
83	402	46		20	100+	70	W 59/55			Well
85	402	140		20	2000	95.69	W 60/55			
86	204	130			200+	82	W 61/55			
87	98	25		14	"large"				Schists (?)	
88	97	20		18	"good"	99	W 62/55		Meta-sediments	
89	98	75		35	200+	120	W 66/55		Schists	Well and bore
90	402	14		5	?	115	W 55/55			Well
91	811	15		2	small	93	W1233/55		Alluvium	Well
92	701A	12		1	small	5	W1229/55		Flaggy quartzites	Well
93	701A	20		10	small	14	W1235/55		Alluvium and schists	Well
94	812	86			400	49	W1230/55		Clay 40 - 50 feet then hard blue rock	
95	812	103							Clay. Solid rock from 100 feet	Very little water struck. Abandoned
96	812	100							Clay. Solid rock at 100 feet	40 ft. from No.95 Very little water struck. Abandoned
97	812	No details			small	-			Schists	
98	812	200			good	173	W1216/55			Soft drilling
99	811	170	120			132	W1249/55		Kanmantoo schist and hard quartzite. Ironstone reported at 120 feet	
100	812	420	115	25	500	59	W1205/55			Well and bore
101	812,813	shallow		1	small	137	W1250/55		Fine grained sandy schist	Well on road
102	455	84		36		55	W1328/55		Shaft penetrating talcose clays, quartz and leached sandstone	Golden Gate Mine (gold)
103	962	22		10		93	W 65/55			Well
104	524	125			300				Sandstone and quartzite	
105	525	35		shallow		169	W1203/55		Schists and biotite gneiss	Well
106	525	274	30,75	shallow	450				Quartzite	Housebore
107	524	12		10	small	17	W1231/55		Five feet of sandstone at bottom	Well
108	524	22		8	small	96	W1247/55			Well
109	468	230		225	300	119	W1196/55		Fine grained hard schist	
110	465	105	41,96	6	400	387	W2909/55		Drillers log; 0-3 sub-soil; 3-6 Yellow clay; 6-40 brown soft rock; 40-41 hard bands of blue rock; 41-95 soft grey yellowish rock; 95-105 blue rock with hard bands	
111	861	90	47,86		200	32	Dept. Agri.		"Hard rock" and schists Pegmatite masses nearby	
113	532	100		shallow	230(?)	120	W1217/55		Alluvium	Bore by Tanunda Creek
114	520	18		1	small				Fine grained micaceous sandstone	Well not sampled water mixed with rain water
115	469	30			small					
116	965				flowed	salty			Sandy schists and pegmatites	Abandoned
117	971	25								Well
118	521	235	32,129, 226		300	136.64	8237		Fine grained micaceous sandstone with nearby pegmatites	
119	521	15		2	small	15	W1200/55		Fine micaceous sandstone	
120	566	20		3		108	W1199/55		Fine grained sandstone and quartzite	
121	473	20		shallow		19	W1551/55		Alluvium	Well
122	473	87			250	83	W1552/55		Micaceous schist with pegmatite, aplite and quartz veining	
123	473	10			small				Meta-sediments	Well
124	473	10		shallow	small	8	W1550/55		Weathered aplite	Well
125	970	115	55,110,	46					Horwood Bagshaw log. 0-1 soil; 1-10 brown clay; 10-24 grey sandstone; 24-35 hard grey sandstone; 35-65 soft yellow sandstone; 65-75 soft grey sandstone; 75-85 soft grey micaceous sandstone; 85-115 brown micaceous sandstone	

Table No. 1

Hundred MOOROOROO

SUMMARY OF BORE RECORDS

Ground Water Survey

County LIGHT

BORE	SECTION	DEPTH in feet below surface			SUPPLY	SALINITY		HEIGHT above sea level	Strata passed through	Remarks
		Total	Water cut	Static level	Gallons per hour	Grains per gallon	Analysis No.			
126	970	87								Said to be too saline for stock - abandoned
127	970	20		4		71	W 67/55			Well in NE corner
128	529	125		0-12	120	51	W1217/55		Said to be in alluvium	Bottom of bore silted
129	544	22		8	poor	147	W1220/55		Hard micaceous quartzite	Well
129A	544	18		4	mill				Hard micaceous quartzite	Well
130	480	17		6	small	108.15	W 53/55		Meta-sediments	Well
131	480	12		4	small	147	W 52/55		Alluvium, sand and clay	Well
132	474	140			poor					
133	474	124			poor					
134	969	178	17			"Very	good"		Light micaceous rock	Bore in SW corner Not sampled
135	969	13		10		600	W 57/55			Well in SE corner
136	582	209				21	W1241/55			
137	549	15		1	small	61	W1218/55			Well
138	549	20		1	small	119	W1201/55			Well
139	550	102			50				Very hard rock	
140	487	87	19,78	16	160	183.10	6992		0-16 Yellowish rock; 16-87 Bluish rock	
141	487	155	145-150	60-70	"Very good"	244	W2661/52			
142	486	25	10	10	small	252	W1153/53			Well
143	483	15		3	small	109	W1557/55		Quartz mica schist near aplite mass	
144	488	15		shallow	small	74	W1560/55		Alluvium	Well west of Creek
145	494	shallow			small				Alluvium	Well
146	493	8		3	"good"	63	W1554/55		Probably in alluvium	Well
147	488	shallow		2	small	17	W1561/55		Alluvium	Well east of creek
147A	489	21		2	small	21	W1558/55		Alluvium	Orchard well
148	489	shallow					-			Gate well
149	489	shallow			small		-		Soft rock	House well-water mixed with rain water
150	489	shallow		1	small	8	W1559/55		In soft stone	Paddock well
151	482	150	68,142-150	38	1000	140	W1909/51		Drillers log; 0-8 Clay and sand; 6-68 yellow soft sandstone; 68-132 grey soft sandstone; 132-142 blue sandstone; 142-150 blue coarse rock	
152	941	176	30,160-170	11	2000	157.34	8955		Very hard blue rock	
153	703	125		15	125+	520	W 54/55		Sandy schist	
154	502	18		10		51	W1219/55		Hard sandstone	Well
155	500	75		8	good			1400	Sandy schist	
156	883	130	118,122	80	420	322.34	6230		*Drillers log;* 0-35 *Sedimentary rock;* 35-104 white sandstone; 104-118 grey rock; 118-122 white rock with blue seams; 122-130 grey limestone	
157	881	126	78,118	50	2000+	281	W1134/50			

Table No. 2

Hundred. JELLICOE

SUMMARY OF BORE RECORDS

Ground Water Survey

County EYRE

BORE	SECTION	DEPTH in feet below surface: Total	Water cut	Static level	SUPPLY: Gallons per hour	SALINITY: Grains per gallon	Analysis No.	HEIGHT above sea level	Strata passed through	Remarks
1	84	60		2	1000+	106	W 51/55		Probably in schists	Well
2	82	30		2		292	W 50/55			Well, partly fallen in
3	334	46	27	6	200					
4	79	18		2-5	50	154	W 49/55		Sandy schists	Well
5	78	60	.	20	good				Sandy schists	
6	78	30		6		210	W 500/51			Well
7	76	60				183	W 22/55			House bore
8	75	171	80,135, 171	76		57	W 23/55		Marble at 50 feet - Bluish rock at bottom	
9	75	80		45	small	249	W 24/55		Pipe clay-altered schist	Well by dam
10	368	112		56	3000	39,24 29	W 33/55 W1634/55		Altered marble	Bore
11	364	shallow								Well
12	363	shallow								Well by creek
13	363	28		18	500+	82,2	E. & W.S. 4. 2. 53		Gravel	Well
14	361	25			good	208	W 26/55			Has been dry
15	361	36			1600	139-77	W 25/55		Alluvium and some rock	Bore
16	366	30+		12		113	W 34/55			
17	362									Old well Not in use
18	362	36		19		200	W 27/55			Well
19	362	38		13	1800	137	W 28/55		0-4 clay; 4-6 hard quartzite	Bore
20	362	30+		15	4000	132,56	W 29/55		Fine to medium grained meta-sediments and marble	
21	371	20		shallow	small					Well
22	373	170		40	1200	158,80	W 45/55			
23	373	25		10		80	W 44/55		Sandy alluvium	Well
24	102	90			small					
25	102				small	14	W 39/55			Spring
26	95	25		15		173	W 47/55			Well
27	374	33			400	95	W 31/55		Hard rock	Bore
28	103	14		8	small	212	W 38/55			Well
29	103	190		35	400	185	W 37/55			
30	375	33		20	poor	66	W 30/55			Well
31	518	20		4	"good"	266	W 36/55		Alluvium	Well
32	293	150	147	32	10,000 (?)	207,61	W 46/55		0-146 Sandy "loam" Round stones at 146'. Solid rock at bottom	
33	457					328	W 48/55			Spring
34	453			3	small	415	W 32/55			Spring and well
35	471	12		6		510	W 41/55		Sandy schist	Well
36	467	80								
37	538	120	120	40	?	124	W 35/55		Marble (?)	Bore
38	475				200					Bore N.W. corner of Section
39	469	140	60,128	55	120	425,95	W2620/52		Drillers log; 0-3 subsoil; 3-8 gravel and clay; 8-60 yellow soft rock; 60-109 blue clay and soft rock; 109-128 hard blue rock; 128-132 soft blue rock 132-140 blue clay and soft broken blue rock	
40	147	127	20,80, 115	20	360	73	W 171/50		Drillers log; 0-15 sand and gravel; 15-20 soft broken stone; 20-80 very hard, blue rock; 80-127 broken coarse rock. Finished in very hard rock	
41	480	90			"good"					
42	480	14		5	small	86	W 43/55			Well
43	475	142			120		-		Drillers log; 0-2 soil; 2-5 brown clay; 5-120 grey sandstone; 120-125 grey sandstone; 125-142 layer of sand (?)	Bore
44	147	160		100	Stock supply	242			Sandstone	
45	480	10			Less than 100	20	W 42/55			Well

Table No. 3

Hundred. JUTLAND

SUMMARY OF BORE RECORDS

Ground Water Survey

County. STURT

BORE	SECTION	DEPTH in feet below surface			SUPPLY	SALINITY		HEIGHT above sea level	Strata passed through	Remarks
		Total	Water cut	Static level	Gallons per hour	Grains per gallon	Analysis No.			
1	211	8		5	small	16	W1644/54			
2	5	60		surface	mill	620	W1822/54			
3	5	170	140		350	501.90	W1614/51		Rock	
4	6	100		16	2000				"Brittle shale"	"stock quality only' Abandoned
5	6	120		30	500	72	W1453/55		Angaston marbles (?) Sandy schist on surface	
6	50	270	200		"No supply"					"brackish for stock'
7	50	12		4		37	W1621/51		Blue sandstone	Well
8	50	250	180	51	300	47.52	W1622/51		Blue sandstone	
9	485	150	Dry							Failure bore beside spring. Probably not deep enough
10	193	100			350	162	W1454/55		Soft sandstone	
11	507	36		8		565.91	W1414/51			
12	505	21		6		143.89	W1412/51		Well	
13	147	12		6	small	10.91 160.06	W1404/51 7556		Alluvium	Well
14	149	145	22,140	24	500	102.34	W1628/51		Grey sandstone and yellow, blue and grey rock	
15	149	106	22,78, 95	22	1050	230.02 208	7340 W1626/51		Yellow and blue sandstone and rock	
16	149	11		6	good	230	W1627/51			Well
18	150	16		7		167.10	W1408/51			Well
19	150	160				112.25 123	W1409/51 W1464/54			Well
20	150	22		8						
21	150	17		6		20.29	W1410/51			Well
22	152	175	50,175	10	500	169	W1632/51		Sandstone	
23	152	112	90,106	surface		132	W1634/51		Blue sandstone	
24	152	171	20,100, 170	surface	2000	205.45 138.13	W1638/51 6990		Granite at bottom	
25	152	135	25,96	5	2000	141.27 160 151	9261 W 179/54 W1633/51			
26	152	161	154	23	1000	169	W1635/51		Drillers log; 1-3 subsoil; 3-16 yellow rock; 16-50 soft blue rock; 50-68 hard blue rock 68-69 soft grey rock; 69-103 no record; 103-104 grey rock with quartz; 104-146 soft blue rock; 146-153 soft grey rock, with brown seams; 153-154 grey sandstone; 154-161 soft blue sandstone	
27	152	30		9		128	W1636/51			Well
28	152	19		12		227	W1630/51	1200	Alluvium	Well
29	152	21		18	300	97	W1629/51			
30	152	9		7		24	W1631/51			Well
31	153	18		11		222	W1639/51			Well
32	153	149	149	30		435.66	W1640/51			Well
33	37	13		4		14.61	W1615/51			Well
34	196	57	40	350		128 145 132.79	W2619/51 W1448/54 W1458/55	1100	0-10 Alluvium; 10-35 weathered mica schist; 35-57 mica schist. Eden Valley sandy schists adjacent to contact with Angaston marbles	
35	465	200			good	241.6	D.Chem	1050	Angasten marble	
36	467	227			mill	57.90 47	357/47 W1452/55		Schist rear contact with marbles	
37	510	22		8		158.57	W1416/51			Well
38	512	13		6	small	107.72	W1340/51			Well
39	43	116	60,90 110	36	1100	79.56	W1335/51		Hard blue sandstone	
40	516	60	27	11	100	191.20	W1417/51		"Rock"	
41	516	135	55,100	22	200	163.82	W1418/51	1300	0-93 Pipe clays 93-135 Blue solid rock	
42	148	5				121.24	W1406/51	1250	Alluvium	Well
43	148	15		10	good	230.34	W1407/51			Gate well
44	145	170	120	surface	300	317.68	W1625/51		Sandstone	
45	199	400			Very small					
46	199	135	60,130	40	200	558	W2137/51	1000	Sandy schist close to granite gneiss	

Table No. 3

SUMMARY OF BORE RECORDS

Ground Water Survey

Hundred. JUTLAND

County STURT

BORE	SECTION	DEPTH in feet below surface: Total	Water cut	Static level	SUPPLY: Gallons per hour	SALINITY: Grains per gallon	Analysis No.	HEIGHT above sea level	Strata passed through	Remarks
47	218	13		4	small	16	W1644/51			Well
48	464	59	35	10	120			1150	Quartz mica schist and fine grained micaceous sandstone	
49	464	78	40		120			1030	Quartz mica schist	
50	466	130	84,118, 130	30	2000+	237	W1469/52	1000	Grey and yellow "rock" (Angaston Marbles)	
51	529	28		22		27.25	W1419/51			Well
52	46	145	96,130-145	44	1800	160	10226		Drillers log; 1-3 subsoil; 3-46 brown sandstone; 46-96 hard blue rock; 96-130 blue sand rock; 130-145 blue water bearing rock	
53	46	18		5	500	203	W1616/51			Well
54	47	137	20,62, 127	20	1440	348.78 188.49	6416 W1618/51		Yellow, blue and grey sandstone and blue rock	
55	47	12		7	good	212	W1620/51			Well
56	47	8		3		286	W1619/51	1180		Well
57	144	300	160,255	60	246	339	W2384/51		Drillers log; 0-8 clay; 8-23 soft yellow rock;. 23-160 blue rock; 160-161 white quartz; 161-285 blue rock and quartz; 285-290 grey rock; 290-300 blue soft rock	
58	144	11		5	small	271	W1624/51			Well
59	470	70		flows	200	220 35.36	W1449/54 6173	1300	Sandy schists	
60	517	200	62,161, 198	30	1000	67.83	W1686/51		Drillers log; 0-62 Blue rock; 62-64 grey rock; 64-161 blue rock; 161-164 yellow sand rock; 164-196 black rock; 196-198 coarse gravel; 198-200 hard blue rock	
61	517	22		2		165	W1647/51			Well
62A	154	190		3		178	W1637/51			
62B	154	8		4		222	W1643/51			Well
62C	154	15		4	100	52	W1641/51			Well
62D	154	7		1		237	W1642/51			Well
63	555	17		6		85.90	W1344/51			
64	552	63	30,40	5	200	125.27	W1343/51		Solid rock	
64A	551				800+ (?)	174	W1437/54		-	Spring Commenced flowing after 1954 earthquake
64B	551	90(?)			200(?)	146	W1462/54			
65	550	107	50,80	35	Very large	47.37	W1342/51		Solid rock	
66	536	20		8	300	165	W1648/51			Well
67	536	152	104,139	20	380	36.25	7973 W1649/51		Drillers log; 0-4 subsoil; 4-22 yellow rock; 22-48 hard blue rock; 48-76 grey sandstone; 76-102 yellow rock; 102-106 blue sandstone; 106-139 blue loose rock	
68	539	100	40,92	15	250	73.28 70.11	W1650/51 7290		14 feet gravel on hard rock	
69	136	265	250	60	350	Good	stock		0-49 clay; 49-265 hard rock	No. 2 Bore
70	136	228	218	60	300	295.69	W1403/51		Soft micaceous sandstone	No. 1 Bore
71	291	27		9		538.76	W1411/51			Well
72	574	89	50	1	500	162.28	W1350/51		Solid rock	
73	573	16		5	small	186.13	W1349/51		Alluvium	Well
74	557	11		1		131.36	W1345/51			Quarry - Well - Nitrates present
75	557	28		16		359-27	W1346/51			Well
76	558	14		5		115	W1653/51			Well
77	546	11		3	10009 per day	118	W1652/51			Well
78	561	7		2		86	W1654/51			Well
79	541	30		19		38	W1651/51			Well
80	578	92	85	30	200	229.27	W1351/51		0-92 white clay	
81	580	35		15	small	16.02	W1353/51			
82	580	64	60	10	1000	109.19	W1352/51		Very hard blue rock	
83	571	9		7	small	128	W 348/51			Well
84	581	13		7		173.20	W1355/51			Lower well
85	581	14		9		175.91	W1354/51			Upper well
86	582	80	70	20	1200	-	-		Blue sandstone	
87	583	14		5		95.42	W1420/51			Well

Table No. 3

Hundred. **JUTLAND**

SUMMARY OF BORE RECORDS

Ground Water Survey

County. STURT

BORE	SECTION	DEPTH *in feet below surface* Total	Water cut	Static level	SUPPLY *Gallons per hour*	SALINITY *Grains per gallon*	*Analysis No.*	HEIGHT *above sea level*	*Strata passed through*	*Remarks*
88	568	71	15,65	12	2500	34.31 42.69	W1347/51 6505		15-60 very hard blue rock 60-71 hard blue rock	Well and bore
89	584	256	26,98, 214,254	100	1000	40.21 49	W1421/51 W 472/50		"Blue sandstone some gravel and brown and blue rock"	
90	585	16		14		35.36	W1422/51			
91	130	54	30		200	356.80	W1401/51		Solid rock	
92	117	200	190	100	300	315.01	W1399/51		Solid rock	
93	129	90		Dry						Abandoned
94	119	190		38	200	344.86	W1900/51			
94A	119	126	90	63	200				Quartz mica schist and micaceous sandstone	
95	127	164	45,160	45	350	131.24	W1623/51		Sandstone	
96	111	70							Granite	
97	111	122	31,102, 118	21½	270	147.89	7371	1200	Quartz mica schists	
98	487	233	215-233		2500	74	W1531/54	950	Limestone (Quartz mica schist)	
100	595	108	87	6	1000	217.39	W1358/51		0-20 "Soil" 20-108 "Rock"	
101	593	145			500	315.66	W1425/51			
101A	596	7		6	small	34.42	W1359/51			Well
102	592	13		4	good	206.15	W1357/51			Well
103	591	22		15	good	257.53	W1356/51			Well
104	588	25		14	good	27.46	W1424/51			Well
105	588	27		9		37.37	W1423/51			Well
106	104	80	25,40, 74	25	760	325.55	W1398/51 W 34/50		Sandy schists	
107	104	21		20		260.34	W1397/51			Well
108	103	176	70,170	mill		203	W1443/54	1275	Kanmantoo sandy schists	
109	114	63		13	mill	236	W1445/54	1225	Kanmantoo sandy schists	
109A	102	9	2		mill	263	W1455/54			Well
110	490	120	40,108- 114	30	500	39	W1573/52		Drillers log; 0-4 subsoil; 4-5 clay; 5-18 soft yellow rock; 18-40 grey whitish rock; 40-102 yellow rock; 102-108 grey rock; 108-114 coarse yellow rock; 114-120 grey rock	
111	597	107	98	30	400	71.91	W1360/51		0-30 soft 30-107 rock	
112	597	14		8		128.64	W1361/51			Well
113	598	24		15	200	66.48	W1362/54			
114	599	105	30,70	30	250	63.70	W1363/51		0-10 soil; 10-105 rock	
115	600	90	50	9	500	66.55	W1426/51			Well and bore
116	600	21		10	small	45.58	W1364/51			Well
117	600	105			2000	94.69	W1365/51			
118	600	37		36	small	59.17	W1366/51			Disused well
119	601	200	70,170	30	200	146.04	W1431/51			Well to 30 feet
121	601	30		10	small	11.45	W1433/51			Well
122	601	109	25,50, 80	14	350	53.63	W1427/51		0-20 Soft; 20-109 sandstone	
123	601	126	76	10	200	54.50	W1429/51		Blue solid rock	
124	601	16.		7		96.61	W1428/51			Gate well
125	601	70	40,50	3	800	97.26	W1432/51		Soft sandstone	
126	602	14		9		67.69	W1430/51			Well
126A	602	25		14		62.91	W1434/51			Well
127	101	23		18		175.03	W1396/51			House well
128	101	23		4		206.09	W1395/51			Creek well
129	98	110	75	20	1500- 2000	338.04	W1344/51		Solid rock	
130	96	46			500	Good	stock			
131	454	76	70	40	110	102	10077		Mica sandstone	
132	242	46		41		367.46	W1338/51			
133	609	351	192	60	250	131.61	W1325/51			
134	610	224		40	700	122.70	W1377/51			
135	610	14		2	good	14.33	W1376/51			Well

Table No. 3

Hundred JUTLAND

SUMMARY OF BORE RECORDS

Ground Water Survey

County STURT

BORE	SECTION	DEPTH in feet below surface			SUPPLY	SALINITY		HEIGHT above sea level	Strata passed through	Remarks
		Total	Water cut	Static level	Gallons per hour	Grains per gallon	Analysis No.			
137	608	12		6		235.02	W1373/51			
138	608	89	30,89	12	1200	168.65	W1374/51			
139	611	20		7	good	205.61	W1378/51			Well
140	611	60	55	20	60	183.34	W1379/51			Well and bore
141	607	17		8	small	93.65	W1372/51			Well
142	607	125	110	12	700	91.01	W1371/51		12-125 hard rock	
143	612	100	90	10	1200	92.41	W1350/51		Solid rock	
144	613	170	112	22	3000	103.97	W1381/51			
145	606	20		16		62.60	W1370/51			Well
146	604	15		7		147.46	W1369/51			Bridge Well
147	604	10		5	small	88.81	W1368/51			House Well
148	604	15		9	small	170.16	W1435/51			Well
149	603	150	140	20	2500	94.91	W1367/51		0-20 sand and loam; 20-30 gravel; 30-140 white-cream soft sandstone; 140-150 hard green bedrock	Well and bore
150	92	50		20	mill	216	W1452/54	1250	Kanmantoo sandy schist	
151	69	50	15	flows	500	164	W1457/54		Sandy schists in rear granite contact	Well
151A	900	80	19,70	8	3000	245.75	6832	1050	Sandstone	No. 2 Bore
152	679	120	70		500+	41	W1461/54	650	Angaston marbles	
153	614	200	198	60	1400	66.40	W1382/51		Hard rock	
154	616	172	160	20	6000	43.61	W1383/51		Solid blue rock	
155	87	150	60,148	28	220	357.98	9929	1300	Micaceous sandstone	
156	635	10		4		192.95	W1393/51			Garden Well
156A	635	14		7		37.87	W1392/51			House well
157	624	16		9	poor	266.90	W1385/51			Well disused
158	625	45		14		13.74	W1386/51			House well
159	625	16		7	good	92.94	W1387/51			Garden well
160	627	16		10		100.35	W1388/51			
161	164	86	23,60	9	80	205	W1459/54		Very hard sandy schist	
162	630	11		5	small	96.98	W1390/51			
164	71				mill	34	W1451/54	1200	Sandy schist near granite contact	
165	407	18		2	mill	232	W1453/54		Well in alluvium over sandy schist	
166	163	120	116		1000	72.39	W1337/51			
167	633	14		6	good	41.66	W1391/51			Well
168	636	10		5		46.63	W1389/51			Well
169	404	96		30	mill	420	W1460/54		Sandy schist (Corrosive water)	
170	403	170	63,162	25	2000+	31	W2056/50	1550	Yellow, grey, and blue sandstone and "rock"	
171	401	198		50	mill	211	W1454/54		Sandy schists near granite contact	
172	316				mill	349	W1438/54		Granite outcrops	
173	381				mill	10	W1456/54			Spring
174	440					36	W1436/54			Spring
175	444	178	36,137, 168	24	2000+	49	W1571/50		Yellow, grey and blue sandstone. Bottom in granite	
176	444	49		15	mill	294	W1435/54			
177	324	116		81	140	249.7				
178	458	205		flows	less than 1000	164.77	D.Chem.			
179	429	212	14,79; 142,150 175	10	1000	73.8 59.4	D.Chem.	1400	0-4 Sandy soil; 4-15 yellow sandstone; 15-18 brown sand; 18-60 micaceous rock; 60-62 quartz; 62-79 micaceous rock; 79-114 grey micaceous rock; 114-121 grey quartzite; 121-132 grey micaceous rock; 132-142 grey quartzite; 142-162 micaceous sandstone; 162-212 grey micaceous rock	
180	429	200			1000	52.4 77.2	D.Chem.	1375		
182	312	?	10,40, 55	6	120				Blue micaceous sandstone	-
183	1	-		95	140	53	W1447/54			
185	417	115	75-85	surface	2000+	96.81	D.Chem.		Quartz mica schist	
186	430	120	50,115	3	500	264	W1941/52		At 60 feet fine sand over blue micaceous Sandstone	
187	447	127	8,119	flows	300 flow	116	W1434/54		Granite gneiss	

Table No. 3

SUMMARY OF BORE RECORDS

Ground Water Survey

County STURT

BORE	SECTION	DEPTH in feet below surface: Total	Water cut	Static level	SUPPLY: Gallons per hour	SALINITY: Grains per gallon	Analysis No.	HEIGHT above sea level	Strata passed through	Remarks
JUTLAND										
188	411	3		surface	mill	15	W1433/54			Well
189	411	10		surface	mill	36	W1432/54			Well
190	411	Was 203 Now 180		10	250	-	-		Hard mica schist	
191	412	78	70	shallow	100	40	W1622/55		Micaceous schist	
192	420	173			2000-3000	109.44	D.Chem.			
193	418/420	172		40	1200	35.66	D.Chem.			
194	1835	95	90	8	500	47	W1940/52		Micaceous sandstone	
195	437	122			good	24.99	D.Chem.		Granite outcrops	
196	7060	138	70		mill	71	W1439/54		Very hard	
197	419	18		4	mill	73	W1446/54		Blue sandy schist	
198	419	14		4	mill	48	W1440/54		Granite outcrops nearby	
199	422	10		flows	mill	97	W1450/54			
TALUNGA										
1	1280	375(?)			mill					
2	7003	20		5	mill	262	W1584/54			Well
3	6414	80			1000	200	W1623/55			
4	6414	120			500				"very soft rock"	
5	7014	125			mill	328	W1583/54			
6	1627					248	W1626/55		Mica-sandstone	
7	7018	20			mill	169 224	W1624/55 W1589/54			Well
8	7013	20		1	mill	91	W1585/54			Well
9	7006	20+			small	25	W1629/55		Penetrating felspathic schists	Well by road
10	7006	30		shallow	small	45	W1628/55		Grey schists	House well
11	7006	120			1500					
12	7035	105			250	86	W1580/54			
13	7035	40			700	86	W1587/54		Alluvium along River Torrens	
14	7039	30		2		43	W1630/55		Hard grey schists	Well
15	7007	96-100		30	mill	470	W1467/54	1550		
16	7041	15		8	small	IN	W1588/54		Alluvium	Well by Torrens River
17	7040	145	80	15	250	146	W 20/55			
18	7040	28	26	15	200	249	W 21/55			Well
19	6418	164	50,160	35	200	221	W1466/54	1600		
20	6418	30			mill	204.8	D.Chem.	1575		Well
21	6419	23		3	mill	282	W1465/54	1575	Kanmantoo sandy schists	Well
22	7032	115	115	shallow	280	103.5	E.& W.S. 13. 7.53		"Sandstone"	
23	Water res.	30		10		9	W1625/55		Grey micaceous and felspathic sandstone	
23A	7032					79	E.& W.S. 18.2.49			River Torrens
24	7043	80	70		700	110 5.5.53	W1627/55 18.5.36		Grey micaceous sandstone	
25	7043	252			500	79	W1635/55		Probably micaceous and felspathic sandstone	
26	7044	100								Bore was abandoned - water too saline
27	7044	30		3-10	fair	75	W1632/55		Grey micaceous sandstone	Well
28	7044	115	33etc.	17	mill	425	W1631/55		Grey micaceous sandstone	
29	7058	30		shallow	mill					"stock quality only'
PARA WIRRA										
1	166				mill	193	W1592/54			
2	6363A	90			mill	73	W1591/54			

Table No. 4

DETAILED ANALYSES OF UNDERGROUND WATERS

MOOROOROO

Serial No.	Section No.	Chlorine, Cl.	Sulphuric Acid radicle, SO_4	Carbonic Acid radicle, CO_3	Nitric Acid radicle, NO_3	Sodium, Na	Potassium, K	Calcium, Ca	Magnesium, Mg	Iron, Fe	Silica, SiO_2	Total Saline Matter Grains/Gall.	Total Saline Matter Ounces/Gall.	Calcium carbonate	Calcium sulphate	Calcium chloride
23	429	40.60	5.02	17.40	pres.	22.00	-	9.28	4.98	-	-	99.28	0.23	23.17	-	-
26	428	8.4	2.6	12.9	-	3.9	-	9.2	1.1	-	1.2	39.3	0.09	21.5	2.0	-
29	339	4.20	1.03	8.40	pres.	1.30	-	6.39	0.54	-	-	21.86	0.05	14.01	1.46	0.97
36	506	18.34	2.39	14.10	pres.	10.59	-	7.12	2.69	-	-	55.23	0.12	17.78	-	-
41A	431	40.60	7.57	17.85	pres.	23.40	-	9.80	4.76	-	-	103.98	0.24	24.47	-	-
51	433	30.2	2.3	14.2	-	19.2	-	4.7	1.1	-	-	71.7		HORWOOD	BAGSHAW	ANALYSIS
55	88	73.85	5.93	9.45	nil	40.67	-	4.22	6.59	-	-	140.71	0.32	10.54	-	-
57	507	77.00	9.09	17.40	trace	49.30	-	5.76	6.20	-	-	164.75	0.38	14.38	-	-
58	344	124.60	9.59	16.80	nil	51.89	-	16.59	14.46	-	-	233.93	0.53	28.02	13.59	3.80
59	414	38.08	4.32	14.85	nil	19.21	-	9.15	4.46	-	-	90.07	0.21	22.85	-	-
70	360	16.85	3.46	15.90	trace	14.60	-	3.14	3.47	-	-	57.42	0.13	7.85	-	-
74	399	56.98	5.47	18.75	-	40.75	-	3.29	4.98	-	-	130.22	0.30	8.22	-	-
85	402	45.50	4.07	11.25	trace	26.77	-	2.69	5.41	-	-	95.69	0.21	6.72	-	-
89	98	51.98	5.14	14.40	pres.	18.15	-	11.69	8.28	-	-	109.64	0.25	24.02	7.03	-
98	812	89.60	6.91	4.80	pres.	48.49	-	3.55	6.63	-	-	159.98	0.37	8.01	1.15	-
99	811	71.05	5.64	5.25	nil	31.54	-	3.89	8.89	-	-	126.26	0.29	8.76	1.29	-
113	532	63.70	2.18	6.00	nil	35.10	-	4.00	3.84	-	-	114.82	0.26	9.99	-	-
118	521	77.50	5.72	5.10	nil	36.65	-	2.43	9.24	-	-	136.64	0.31	6.07	-	-
130	480	49.18	7.08	12.15	trace	29.74	-	5.44	4.56	-	-	108.15	0.25	13.58	-	-
140	497	89.74	13.50	11.70	nil	59.91	-	2.50	5.75	-	-	183.10	0.42	6.24	-	-
152	941	86.82	5.76	8.85	-	40.74	-	4.79	10.38	-	-	157.34	0.34	11.96	-	-
153	703	291.20	15.39	8.10	nil	127.37	-	8.29	34.67	-	-	485.02	1.11	13.51	9.78	-
156	883	187.60	12.96	10.80	-	76.23	-	7.79	26.96	-	-	322.34	0.74	18.01	1.97	-
157	881	150.15	12.26	3.00	nil	52.41	-	9.06	22.60	-	-	249.48	0.57	5.00	17.37	5.40

JELLICOE

Serial No.	Section No.	Chlorine, Cl.	Sulphuric Acid radicle, SO_4	Carbonic Acid radicle, CO_3	Nitric Acid radicle, NO_3	Sodium, Na	Potassium, K	Calcium, Ca	Magnesium, Mg	Iron, Fe	Silica, SiO_2	Total Saline Matter Grains/Gall.	Total Saline Matter Ounces/Gall.	Calcium carbonate	Calcium sulphate	Calcium chloride
10	368	9.00	1.69	13.65	pres.	3.93	-	10.18	0.79	-	-	39.24	0.09	22.76	2.40	1.00
14	361	93.45	13.46	24.00	pres.	53.97	-	9.20	11.07	-	-	205.15	0.47	22.97	-	-
15	361	64.75	8.64	16.35	pres.	35.00	-	6.40	8.63	-	-	139.77	0.31	15.98	-	-
19	362	57.75	7.61	18.15	pres.	30.02	-	10.25	7.00	-	-	130.78	0.30	25.59	-	-
20	362	58.80	7.20	17.25	pres.	33.37	-	11.72	4.22	-	-	132.56	0.30	28.77	0.68	-
22	373	73.68	8.02	18.90	pres.	41.37	-	9.55	7.28	-	-	158.80	0.36	23.85	-	-
29	103	93.28	6.75	12.15	nil	50.46	-	4.40	9.27	-	-	176.31	0.40	10.99	-	-
32	293	107.10	8.68	16.65	trace	54.79	-	9.37	11.02	-	-	207.61	0.47	23.40	-	-
37	538	55.48	6.54	13.80	nil	32.31	-	7.01	4.94	-	-	120.08	0.27	17.50	-	-
39	469	242.90	21.44	11.40	nil	112.30	-	9.79	27.92	-	-	425.95	0.97	19.01	7.41	-

TALUNGA

Serial No.	Section No.	Chlorine, Cl.	Sulphuric Acid radicle, SO_4	Carbonic Acid radicle, CO_3	Nitric Acid radicle, NO_3	Sodium, Na	Potassium, K	Calcium, Ca	Magnesium, Mg	Iron, Fe	Silica, SiO_2	Total Saline Matter Grains/Gall.	Total Saline Matter Ounces/Gall.	Calcium carbonate	Calcium sulphate	Calcium chloride
20	6418	83.3	17.5	15.7	17.3	43.6		17.3	9.1		1.9	204.8		26.2	23.2	
22	7032	57.4	3.6	5.5		26.5		4.1	6.4			103.5	0.24	9.1	1.5	
23A	7032	115.5	2.5	22.3		65.4		6.9	10.5			223.1	0.51	17.2		
25	7043	22.13	1.56	9.95		20.44		0.61	0.84			55.53	0.13	1.52		

IN PORTION OF CO. LIGHT

Assumed Composition of Salts: Magnesium carbonate	Magnesium sulphate	Magnesium chloride	Sodium carbonate	Sodium sulphate	Sodium chloride		Sodium nitrate	Potassium chloride	Silica	Hardness (degrees English): Total	Temporary	Permanent	Due to calcium	Due to magnesium	Analysis No.
4.93	6.29	8.97	-	-	55.92		pres.			43.66	29.01	14.65	23.17	20.49	W1226/55
-	1.4	3.1	-	-	9.9	0.2			1.2	27.5	21.5	6.0	23.0	4.5	E.G W.S.11 11/6/46
-	-	2.11	-	-	3.31		pres.			18.17	14.01	4.16	15.95	2.22	W1213/55
4.83	3.00	2.70	-	-	26.92		pres.			20.88	23.50	5.35	17.78	11.07	W1214/55
4.47	9.49	6.07	-	-	59.48		pres.			44.06	29.78	14.28	24.47	19.59	W1222/55
22/7/55															
4.40	7.43	14.96	-	-	103.38		nil			37.66	15.77	21.89	10.54	27.12	W1211/55
12.34	11.39	1.33	-	-	125.31		trace			39.89	29.03	10.86	14.38	25.51	W1215/55
-	-	56.63	-	-	131.89		nil			100.93	28.02	72.91	41.43	59.50	W1223/55
1.62	5.41	11.36	-	-	48.83					41.20	24.77	16.43	22.85	18.35	W1979/52
12.04	-	-	4.63	5.12	27.78		trace			22.15	22.15	nil	7.85	14.30	W1978/52
17.27	-	-	2.70	8.09	93.94					28.71	88.71	-	8.22	20.40	5555
10.15	5.10	5.68	-	-	68.04		trace			28.99	18.78	10.21	6.72	22.77	W60/55
-	0.23	32.23	-	-	46.13		pres.			63.27	24.02	39.25	29.19	34.08	W66/55
-	7.64	19.93	-	-	123.25		pres.			36.15	8.01	28.14	8.86	27.29	W1216/55
-	5.93	30.11	-	-	80.17		nil			46.29	8.76	37.53	9.71	36.58	W1249/55
0.01	2.73	12.88	-	-	89.21		nil			25.79	9.99	15.80	9.99	15.80	W1248/55
2.05	7.17	28.20	-	-	93.15		nil			44.10	8.50	35.60	6.07	38.03	8237
5.64	8.87	4.46	-	-	75.60		trace			32.35	20.29	12.06	13.58	18.77	W53/55
11.19	12.47	-	-	5.25	147.95		nil			29.90	19.53	10.37	6.24	23.66	6992
2.36	7.22	32.26	-	-	103.54					54.67	14.76	39.91	11.96	42.71	8955
-	10.64	127.35	-	-	323.74		nil			163.37	13.51	149.86	20.70	142.67	W54/55
-	14.50	94.10	-	-	193.76					130.41	18.01	112.40	19.46	110.95	6230
-	-	88.50	-	-	133.21		nil			115.63	5.00	110.63	22.63	93.00	W58/55
															JELLICOE
-	-	3.09	-	-	9.99		pres.	pres.		27.78	22.76	5.02	24.53	3.25	W33/55
14.38	16.87	13.75	-	-	137.18		pres.			68.52	40.45	28.47	22.97	45.55	W26/55
9.51	10.83	14.49	-	-	88.96		pres.			51.50	27.26	24.24	15.98	35.52	W25/55
3.95	9.54	15.39	-	-	76.31		pres.			54.39	30.28	24.11	25.59	28.80	W28/55
-	8.42	9.87	-	-	84.82		pres.			46.64	28.77	17.87	29.27	17.37	W29/55
6.46	10.05	13.28	-	-	105.16		pres.			53.80	31.50	22.30	23.85	29.95	W45/55
7.81	8.46	20.79	-	-	128.26		nil			49.14	20.25	28.89	10.99	38.15	W37/55
3.68	10.88	30.39	-	-	139.26		trace			68.74	27.76	40.98	23.40	45.34	W46/55
4.65	8.20	7.60	-	-	82.13		nil			37.82	23.01	14.81	17.50	20.32	W35/55
-	20.31	93.27	-	-	285.95		nil			139.35	19.01	120.34	24.45	114.90	W2620/52
															TALUNGA
	1.3	34.6			94.6		23.8		1.0	104.0	26.2	77.8	59.0	45.0	D.Chem.
	3.2	22.3			67.4					36.5	9.1	27.4	10.2	26.3	D.Chem.
16.8	3.2	19.8			166.1					60.4	37.1	23.3	17.2	43-2	D.Chem.
2.91			12.31		36.48					4.98	4.98	-	1.52	3.46	D.Chem.

Table No. 5

DETAILED ANALYSES OF UNDERGROUND WATERS

Serial No.	Section No.	Chlorine, Cl.	Sulphuric Acid radicle, SO_4	Carbonic Acid radicle, CO_3	Nitric Acid radicle, NO_3	Sodium, Na	Potassium, K	Calcium, Ca	Magnesium, Mg	Iron, Fe	Silica, SiO_2	Total Saline Matter Grains/Gall.	Total Saline Matter Ounces/Gall.	Calcium carbonate	Calcium sulphate	Calcium chloride
3	5	272.33	24.11	23.85	trace	136.87		20.22	24.52			501.90	1.15	39.78	14.57	
8	50	11.80	1.36	15.90	trace	16.00		0.21	2.25			47.52	0.11	0.52		
11	507	323.05	32.09	5.40	pres.	170.72		9.72	24.93			565.91	1.29	9.01	20.76	
12	505	74.78	6.50	9.75	pres.	42.35		4.22	6.29			143.89	0.33	10.54		
14	149	67.15	5.76	10.05	nil	40.57		6.50	10.03			160.06	0.37	16.23		
14	149	56.71	3.29	5.70	-	26.79		3.64	6.21			102.34	0.23	9.09		
15	149	127.05	8.02	15.90	trace	42.92		17.23	18.90			230.02	0.53	26.52	11.37	9.03
19	150	55.02	3.28	13.02		30.10		4.50	6.33			112.25	0.26	11.24		
21	150	6.95	1.23	1.90	3.65	5.25		0.14	1.27			20.29	0.05	0.35		
24	152	104. 80	12.71	15.60	nil	52.70		5.15	14.49			205.45	0.47	12.86		
25	152	76.72	4.20	9.45	nil	32.27		3.43	12.06	trace		138.13	0.32	8.56		
25	152	77.14	4.28	10.35	nil	36.19		1.79	11.52			141.27	0.32	4.46		
32	153	246.05	22.59	12.45	nil	114.97		13.36	26.24			435.66	1.00	20.76	17.15	
33	37	3.64	0.78	1.05	5.11	2.21		1.15	0.67			14.61	0.03	1.75	1.11	1.31
34	196	69.65	8.39	6.90	pres.	37.14		3.93	6.78			132.79	0.30	9.81		
35	465	130.9	11.3	11.4	nil	48.9		28.4	9.4		1.0	241.6		19.0	15.8	44.8
36	467	22.20	4.24	9.75	trace	14.78		5.36	1.57			57.90		13.38		
37	510	81.50	10.16	8.10	pres.	51.63		1.72	5.46			158.57	0.36	4.29		
38	512	51.95	5.68	8.40	3.65	28.44		3.22	6.38			107.72	0.25	8.04		
39	43	39.70	2.59	9.00	nil	19.28		3.22	5.77			79.56	0.18	8.04		
43	148	118.65	10.17	19.95	pres.	53.02		13.32	15.23			230.34	0.53	33.27		
44	145	190.40	10.45	6.30	nil	74.44		12.58	23.51			317.68	0.73	10.51	14.81	11.10
51	529	8.90	1.28	2.70	5.11	7.38		0.79	1.09			27.25	0.68	1.97	2.14	
54	47	193.20	14.36	16.35	nil	93.36		11.08	20.43			348.78	0.80	27.27	0.54	
54	47	9.80	1.69	13.35	pres.	6.60		8.08	0.81			40.33	0.09	20.17		
60	517	9.30	2.67	4.20	7.52	9.04		0.93	1.70			35.36	0.81	2.32		
60	517	33.67	3.21	8.10	nil	14.46		1.00	7.39			67.83	0.16	2.50		
63	555	33.74	0.37	19.05	nil	25.65		3.22	3.87			85.90	0.20	8.04		
64	552	62.03	6.30	11.70	-	31.86		6.65	6.73			125.27	0.29	16.61		
65	550	18.85	3.25	8.10	pres.	14.02		1.00	2.45			47.37	0.11	2.50		
67	536	9.34	2.18	10.80	pres.	11.06		1.50	1.37			36.25	0.08	3.75		
67	536	41.30	3.25	7.05	13.13	18.29		9.36	5.07			97.45	0.22	11.76	4.61	9.11
68	539	29.05	2.39	11.70	nil	23.39		1.64	1.94			70.11	0.16	4.10		
68	539	31.29	2.96	11.10	trace	23.50		2.22	2.21			73.28	0.17	5.54		
70	136	159.95	13.51	15.90	-	84.96		4.00	17.37			295.69	0.68	9.99		
71	291	304.50	29.62	13.95	pres.	135.64		23.37	31.68			538.76	1.23	23.27	41.98	4.68
72	574	84.34	6.42	11.70	-	49.18		3.43	7.21			162.28	0.37	8.57		
74	557	65.94	5.23	10.50	pres.	43.11		3.00	3.58			131.36	0.30	7.49		
75	557	179.90	16.95	29.25	pres.	108.98		10.08	14.11			359.27	0.82	25.17		

Hd. JUTLAND

IN PORTION OF CO. STURT

Assumed Composition of Salts										Hardness (degrees English)					
Magnesium carbonate	Magnesium sulphate	Magnesium chloride	Sodium carbonate	Sodium sulphate	Sodium chloride		Sodium nitrate	Potassium chloride	Silica	Total	Temporary	Permanent	Due to calcium	Due to magnesium	Analysis No.
	17.33	82.32			347.90		trace			151.36	39.78	111.58	50.49	100.87	W1614/51
7.80			17.74	2.01	19.45		trace			9.78	9.78	-	0.52	9.26	W1622/51
	21.86	80.32			433.96		pres.			126.83	9.01	117.82	24.27	102.56	W1414/51
4.82	8.15	12.73			107.65		pres.			36.42	16.26	20.16	10.54	25.88	W1412/51
0.45	7.22	33.05			103.11		-			57.51	16.77	40.74	16.23	41.28	7556
0.35	4.12	20.68			68.10		-			34.64	9.50	23.14	9.09	25.55	W1628/51
74.01					109.09		trace			120.80	26.52	94.28	43.03	77.77	7340
8.83	4.11	11.55			76.52		-			37.29	21.73	15.56	11.24	26.05	W1409/51
2.23	1.54	1.25			9.92		5.00			5.58	2.98	2.60	0.35	5.23	W1410/51
11.09	15.93	31.60			133.97					72.48	26.03	46.45	12.86	59.62	W1638/51
6.07	5.26	36.22			82.02					58.18	15.76	42.42	8.56	49.62	6990
10.80	5.36	28.66			91.99					51.85	17.29	34.56	4.46	47.39	9261
	13.15	92.34			292.26					141.33	20.76	120.57	33.37	107.96	W1640/51
		2.62			0.82		7.00			5.63	1.75	3.88	2.87	2.76	W1615/51
1.43	10.51	16.64			94.40		pres.			37.71	11.50	26.21	9.81	27.90	W1458/55
		46.3			124.1				1.0						D.Chem.
2.43	4.31			1.18	36.60					19.94	16.26	3.58	13.38	6.46	School of M 357/47
7.77	12.73	2.55			131.23		pres.			26.76	13.51	13.25	4.29	22.47	W1416/51
5.03	7.12	13.67			68.86		.5.00			34.30	14.01	20.29	8.04	26.26	W1340/51
5.87	3.25	13.39			49.01		nil			31.78	14.99	16.79	8.04	23.74	W1335/51
12.75	49.54				134.78		pres.			95.93	33.27	62.66	33.27	62.66	W1407/51
		92.07			189.19		nil			128.13	10.51	117.62	31.41	96.72	W1419/51
	1.60	0.59			13.95		7.00			6.45	4.52	1.93	1.97	4.48	W1419/51
	17.52	66.14			237.31					111.74	26.27	84.47	27.67	84.07	6416
1.77	1.48			0.75	16.16		pres.			23.50	22.27	1.23	20.17	3.33	W1681/51
3.95	2.77	0.68			15.33		10.31			9.31	7.01	2.30	2.32	6.99	6173
9.28	4.02	15.27			36.76		nil			32.91	13.53	19.38	2.50	30.41	W1646/51
15.42			8.27	0.55	55.62		-			23.96	23.96	-	8.04	15.92	W 134/51
2.45	7.90	17.31			81.00		-			44.30	19.53	24.77	16.61	27.67	W1343/51
8.49			0.99	4.81	30.58	Nitrates	pres.			12.58	12.58	nil	2.50	10.08	W1342/51
4.75			9.13	3.22	15.40		pres.			9.39	9.39	nil	3.75	5.64	7973
		19.86			34.11		18.00			44.23	11.76	32.47	23.37	20.86	W1649/51
6.73			7.86	3.53	47.89		nil			12.08	12.08	nil	4.10	7.98	7290
7.66			4.12	4.38	51.58		trace			14.64	14.64	nil	5.54	9.10	W1650/51
13.93	16.93	38.88			215.96		-			81.45	26.52	52.93	9.99	71.46	W1403/51
		124.06			344.77		pres.			188.71	23.27	165.44	58.35	130.36	W1411/51
9.22	8.05	11.43			125.01		-			38.22	19.51	18.71	8.57	29.65	W1350/51
8.45	5.64			1.08	108.70	Nitrate	pres.			22.20	17.51	4.69	7.49	14.71	W1345/51
19.90	21.24	15.98			276.98		pres.			83.24	48.79	34.45	25.17	58.07	W1346/51

Table No. 5

DETAILED ANALYSES OF UNDERGROUND WATERS

Serial No.	Section No.	Chlorine, Cl.	Sulphuric Acid radicle, SO_4	Carbonic Acid radicle, CO_3	Nitric Acid radicle, NO_3	Sodium, Na	Potassium, K	Calcium, Ca	Magnesium, Mg	Iron, Fe	Silica, SiO_2	Total Saline Matter Grains/Gall.	Total Saline Matter Ounces/Gall.	Calcium carbonate	Calcium sulphate	Calcium chloride
80	578	128.80	8.39	8.10	-	70.63		2.86	10.49			229.27	0.42	7.14		
81	580	5.46	0.95	3.47	-	4.51		1.25	0.38			16.02	0.04	3.12		
82	580	57.26	4.03	9.90	-	23.76		5.43	8.81			109.19	0.25	13.56		
83	571	62.87	3.74	13.65	trace	39.00		3.36	5.38			128.00	0.29	8.39		
84	581	87.50	7.08	16.05	trace	44.92		7.86	9.79			173.20	0.40	19.63		
85	581	95.90	6.17	12.30	trace	41.42		6.57	13.35			175.91	0.40	16.41		
87	583	35.63	6.34	17.70	pres.	28.38		3.50	3.87			95.42	0.22	8.74		
88	568	11.80	2.23	7.35	trace	9.81		1.86	1.27			34.31	0.08	4.64		
89	584	16.35	2.02	6.90	pres.	11.58		1.43	1.93			40.21	0.09	3.57		
90	558	12.95	1.52	7.50	trace	10.59		1.36	1.44			35.36	0.08	3.40		
92	117	172.20	16.38	14.55	-	81.82		10.72	19.34			315.01	0.72	24.27	3.40	
91	130	177.10	18.85	88.05	trace	111.48		8.65	12.67			356.80	0.82	21.60		
94	119	196.35	11.03	14.25	-	95.49		5.93	21.81			344.86	0.79	14.81		
95	127	65.53	8.81	13.80	-	25.38		2.14	15.58			131.24	0.30	5.34		
97	111	77.53	6.83	11.10	-	35.94		6.79	9.70			147.89	0.34	16.95		
100	595	112.15	8.76	9.30	-	58.14		0.86	14.18			217.39	0.50	12.14		
101	593	160.65	17.08	11.70	18.97	74.99		10.29	21.98			315.66	0.72	19.51	8.42	
101A	596	16.85	2.96	2.25	pres.	8.90		1.86	1.60			34.42	0.08	3.75	1.22	
102	592	100.10	12.18	18.45	-	58.13		8.00	9.29			206.15	0.47	19.98		
103	591	139.30	11.19	15.00	pres.	62.61		14.86	14.57			257.53	0.59	25.02	15.86	0.47
104	588	9.20	2.26	5.55	pres.	8.73		0.93	0.81			27.46	0.06	2.32		
105	588	12.55	1.15	5.85	4.38	10.97		1.14	1.33			37.37	0.09	2.85		
106	104	181.30	16.25	14.25	trace	71.70		20.80	21.85			325.55	0.74	23.77	23.03	12.46
107	104	153.30	8.64	7.50	pres.	55.58		17.58	17.74			260.34	0.60	12.51	12.24	24.84
111	597	35.00	3.33	8.55	-	15.47		3.64	5.92			71.91	0.16	9.09		
112	597	66.08	6.17	10.65	pres.	30.00		7.79	7.95			128.64	0.29	17.76	2.31	
113	598	30.52	3.58	8.40	pres.	18.21		2.64	3.43			66.48	0.15	6.60		
115	600	28.95	3.25	9.75	pres.	18.57		2.93	3.10			66.55	0.15	7.32		
116	600	11.35	8.60	8.80	pres.	13.86		1.50	1.42			45.58	0.10	3.75		
117	600	41.58	4.44	13.65	trace	26.70		3.86	4.46			94.69	0.22	9.64		
118	600	22.75	1.52	13.95	pres.	11.16		4.72	5.07			59.17	0.14	11.78		
119	601	56.14	8.15	13.65	19.17	29.75		10.94	8.24			146.04	0.33	22.77	6.18	
121	601	40.32	9.96	18.15	7.29	24.40		7.86	7.47			115.45	0.26	19.62		
122	601	20.35	3.29	10.05	trace	15.41		2.00	2.53			53.63	0.12	4.99		
123	601	21.35	2.43	9.75	trace	18.44		1.00	1.53			54.50	0.13	2.50		
124	601	41.16	5.27	14.10	pres.	28.78		3.43	3.87			96.61	0.22	8.56		
125	601	43.54	4.73	12.60	-	29.84		2.79	3.76			97.26	0.22	6.97		
126	602	26.46	4.90	10.65	pres.	22.14		1.57	1.97			67.69	0.16	3.92		
126A	602	25.95	4.40	9.90	pres.	15.84		3.00	3.82			62.91	0.14	7.49		
127	101	106.80	0.70	7.35	trace	30.05		15.86	14.27			175.03	0.40	12.26	0.99	29.52

IN PORTION OF CO. STURT

Assumed Composition of Salts										Hardness (degrees English)					
Magnesium carbonate	Magnesium sulphate	Magnesium chloride	Sodium carbonate	Sodium sulphate	Sodium chloride		Sodium nitrate	Potassium chloride	Silica	Total	Temporary	Permanent	Due to calcium	Due to magnesium	Analysis No.
5.37	10.51	26.70			179.55					50.30	13.52	36.78	7.14	33.16	W1351/51
1.32			1.17	1.41	9.00		-			4.69	4.69	-	3.12	1.57	W1353/51
2.49	5.05	27.69			60.40		-			49.80	16.52	33.88	13.56	36.24	W1352/51
12.11	4.69	3.68			99.13		trace			30.53	22.76	7.77	8.39	22.14	W1348/51
6.02	8.87	24.51			114.71		trace			59.89	26.77	33.12	19.63	40.26	W1355/51
3.46	7.73	73.04			105.27		trace			72.19	20.53	51.66	16.41	55.78	W1354/51
13.42			5.14	9.38	58.74		pres.			24.67	24.67	-	8.74	15.93	W1420/51
4.40			2.54	3.28	19.45		trace			9.85	9.85	-	4.64	5.21	W1347/51
6.69			2.99		86.96		pres.			11.51	11.51	-	3.57	7.94	W1421/51
4.99			3.37	2.25	21.35		trace			9.33	9.33	-	3.40	5.93	W1422/51
	17.52	61.87			207.95					106.35	24.27	82.08	26.77	79.58	W1399/51
21.22	23.62	6.97			283.39		trace			73.73	46.78	26.95	21.60	52.13	W1401/51
7.55	13.82	65.95			242.73					104.55	23.78	80.77	14.81	89.74	W1400/51
14.90	11.04	35.44			64.52		-			69.44	23.03	46.41	5.34	64.10	W1623/51
1.32	8.56	29.72			91.34		-			56.87	18.51	38.36	16.95	39.92	7371
2.84	10.98	43.63			147.80					70.48	15.51	54.97	12.14	58.34	W1358/51
	13.96	75.04			172.73		26.00			116.15	19.51	96.64	25.70	90.45	W1425/51
	2.63	4.19			22.63		pres.			11.23	3.75	7.48	4.65	6.58	W1359/51
9.09	15.26	14.06			147.76		-			58.23	30.77	27.46	19.98	38.25	W1357/51
		57.06			159.12		pres.			97.07	25.02	72.05	37.10	59.97	W1356/51
2.81			3.82	3.34	15.17		pres.			5.65	5.65	-	2.32	3.33	W1424/51
4.63			1.52	1.70	20.69		6.00			8.32	8.32	-	2.85	5.47	W1423/51
		85.57			180.72		trace			141.86	23.77	118.09	51.94	89.92	W1398/51
		69.47			141.28		pres.			116.89	12.51	104.38	43.89	73.00	W1397/51
4.36	4.17	14.96			39.33		pres.			33.44	14.27	19.17	9.09	24.35	W1360/51
	5.69	26.63			76.25		pres.			52.17	17.76	34.41	19.46	32.71	W1361/51
5.82	4.47	3.29			46.28		pres.			20.70	13.51	7.19	6.60	14.10	W1362/51
7.53	4.07	0.43			47.20		pres.			20.08	16.25	3.83	7.32	12.76	W1426/51
4.92			5.48	12.72	18.71		pres.			9.59	9.59	-	3.75	5.84	W1364/51
11.06	5.57	0.55	-	-	67.87		trace			27.97	22.76	5.21	9.64	18.33	W1365/51
9.68	1.90	7.44			28.37		pres.			32.64	23.26	9.38	11.78	20.86	W1366/51
	4.75	28.51			57.55		26.28			61.22	22.77	38.45	27.31	33.91	W1431/51
8.98	12.48	9.24			55.13		10.00			50.36	30.28	20.08	19.62	30.74	W1433/51
8.77			1.45	4.87	33.55		trace			15.40	15.40	-	4.99	10.41	W1427/51
5.30			7.91	3.59	35.20		trace			8.79	8.79	-	2.50	6.29	W1429/51
12.61	1.14			6.45	67.85		pres.			24.47	23.52	0.95	8.51	15.91	W1428/51
11.83	1.73			4.95	71.78		-			22.44	21.00	1.44	6.97	15.47	W1432/51
6.82			6.09	7.24	43.62		pres.			12.01	12.01	-	3.92	8.09	W1430/51
7.60	5.51	2.04			40.27		pres.			23.21	16.50	6.71	7.40	15.72	W1434/51
		55.28			76.38		trace			98.32	12.26	86.06	39.60	58.72	W1396/51

Table No. 5

DETAILED ANALYSES OF UNDERGROUND WATERS

Serial No.	Section No.	Chlorine, Cl.	Sulphuric Acid radicle, SO_4	Carbonic Acid radicle, CO_3	Nitric Acid radicle, NO_3	Sodium, Na	Potassium, K	Calcium, Ca	Magnesium, Mg	Iron, Fe	Silica, SiO_2	Total Saline Matter Grains/Gall.	Total Saline Matter Ounces/Gall.	Calcium carbonate	Calcium sulphate	Calcium chloride
128	101	117.60	8.35	8.40	trace	48.51		7.72	15.51			206.09	0.47	14.01	7.17	
129	98	195.50	13.78	9.15	nil	85.84		12.51	21.26			338.04	0.77	15.26	19.53	1.80
132	242	219.10	15.60	5.40	pres.	89.74		9.65	27.97			367.46	0.84	9.01	20.52	
133	609	73.22	4.86	6.90	pres.	35.21		2.29	9.13			131.61	0.30	5.71		
134	610	66.01	5.88	6.45	nil	34.21		3.79	6.36			122.70	0.28	9.46		-
135	610	5.18	2.76	1.47	pres.	3.13		0.95	0.84			14.33	0.03	2.37		
137	608	123.90	13.41	12.00	trace	68.88		6.36	10.47			235.02	0.54	15.88		
138	608	91.00	6.75	11.85	-	37.80		8.93	12.32			168.65	0.39	19.77	3.43	
139	611	115.63	9.59	6.90	nil	55.47		6.92	11.73			205.61	0.47	11.51	5.71	
140	611	109.06	5.02	3.60	trace	51.79		2.86	11.01			183.34	0.42	6.00	1.56	-
141	607	42.42	3.91	12.75		23.85		4.29	4.44			93.65	0.21	10.71		
142	607	45.85	4.65	8.40	-	21.41		4.36	6.34			91.01	0.21	10.89		
143	612	47.88	3.05	8.85	pres.	21.35		4.57	6.71			92.41	0.21	11.41		
144	613	49.22	5.06	11.55	-	28.94		4.22	4.98			103.97	0.24	10.54		
145	606	26.95	4.28	7.80	pres.	19.49		2.29	1.79			62.60	0.14	5.72		-
146	604	70.99	6.95	15.90	trace	35.41		11.15	7.06			147.46	0.34	26.52	1.82	
147	604	38.92	4.07	11.55	-	35.21		1.29	1.77			88.81	0.20	3.22		
148	604	78.23	9.71	18.90	trace	49.64		7.58	6.10			170.16	0.39	18.93		
149	603	43.33	4.65	12.00	pres.	25.77		4.79	4.37			94.91	0.22	11.96		
151A	900	131.60	12.22	14.85	-	62.04		9.15	15.89			245.75	0.56	22.85		-
153	614	31.85	3.13	7.20	trace	17.97		2.86	3.39			66.40	0.15	7.14		
154	616	17.50	2.18	7.35	pres.	12.97		2.36	1.25			43.61	0.10	5.89		
155	86/87	201.25	14.61	16.50	trace	90.06		9.58	25.98			357.98	0.82	23.92		
156	635	106.57	10.49	6.00	pres.	55.78		5.00	9.11			192.95	0.44	10.01	3.36	
156A	635	19.75	2.84	2.40	pres.	7.93		1.72	3.23			37.87	0.09	4.00	0.41	-
157	624	143.50	17.16	9.30	trace	78.44		6.72	11.78			266.90	0.61	15.51	1.73	
158	625	5.43	0.69	2.63	trace	3.03		1.15	0.81			13.74	0.03	2.87		
159	625	46.06	3.46	9.15	-	26.92		3.07	4.28			92.94	0.21	7.67		
160	627	47.18	5.31	11.10	trace	27.82		4.15	4.78			100.35	0.23	10.36		
162	630	41.86	5.43	13.80	trace	27.56		4.00	4.33			96.98	0.22	9.99		-
166	163	28.91	3.05	7.56	8.75	15.62		3.30	5.20			72.39	0.17	8.24		
167	633	18.45	2.14	5.85	pres.	10.42		2.72	2.08			41.66	0.10	6.79		
168	630	22.15	2.39	5.10	pres.	11.93		2.79	2.27			46.63	0.11	6.96		
178	458	81.88	6.50	14.40	-	52.50		4.29	5.20			164.77	0.38	10.73		
179	429	33.6	3.7	6.6	nil	17.5		4.2	3.7		2.8	73.8		10.5		-
179	429	21.7	3.9	6.6	-	12.2		3.0	3.1		1.0	52.4		7.5		
180	429	37.1	3.4	7.2	nil	16.5		4.8	4.9		3.2	77.2		12.0		
185	417	39.87	4.07	15.75	nil	32.05		2.36	2.71			96.81	0.23	5.90		
192	420	50.83	7.04	11.40	traces	31.53		3.79	4.85			109.44	0.25	9.48		
193	418/420	13.37	1.93	7.35	traces	8.67		2.22	2.12			35.66	0.08	5.55		
195	437	9.48	2.10	4.80	traces	4.27		2.22	2.12			24.99	0.06	5.55		

Hd. JUTLAND

IN PORTION OF CO. STURT

Assumed Composition of Salts										Hardness (degrees English)					
Magnesium carbonate	Magnesium sulphate	Magnesium chloride	Sodium carbonate	Sodium sulphate	Sodium chloride		Sodium nitrate	Potassium chloride	Silica	Total	Temporary	Permanent	Due to calcium	Due to magnesium	Analysis No.
	4.12	57.48			123.31		trace			83.11	14.01	69.10	19.28	63.83	W1395/51
		83.26			218.19		nil			118.72	15.26	103.46	31.24	87.48	W1394/51
	1.40	108.43			228.10		pres.			139.19	9.01	130.18	24.09	115.10	W1338/51
4.89	6.09	25.42			89.50		pres.			43.27	11.51	31.76	5.71	37.56	W1375/51
1.10	7.37	17.82			86.97					35.63	10.78	24.87	9.46	26.17	W1377/51
0.07	3.46	0.47			7.96		pres.			5.82	2.45	3.37	2.37	3.45	W1376/51
3.45	16.81	23.77			175.08		trace			58.95	20.00	38.95	13.88	43.07	W1373/51
	5.43	43.94			96.08		-			72.97	19.77	53.20	22.29	50.68	W1374/51
	6.97	40.41			141.01		-			63.96	11.51	52.45	15.70	48.26	W1378/51
	4.91	39.24			131.63		trace			52.45	6.00	46.45	7.15	45.30	W1379/51
8.90	4.90	3.45			65.69		-			28.96	21.27	7.69	10.71	18.25	W1372/51
2.63	5.83	17.23			54.43		-			36.99	14.02	22.97	10.89	26.10	W1371/51
2.82	3.82	20.09			54.27		pres.			39.02	14.74	24.28	11.41	27.61	W1380/51
7.35	6.34	6.19			73.55		-			31.03	19.26	11.77	10.54	20.49	W1381/51
6.14	0.10			6.21	44.43	nitrate	pres.			13.08	13.00	0.08	5.72	7.36	W1370/51
	7.12	22.01			90.01		trace			56.89	26.52	30.37	27.84	29.05	W1369/51
6.14			9.27	6.02	64.16		-			10.50	10.50	-	3.22	7.28	W1368/51
10.61	12.17	2.27			126.18		trace			44.03	31.52	12.51	18.93	25.10	W1435/51
6.79	5.83	4.82			65.51		pres.			29.93	20.02	9.91	11.96	17.97	W1367/51
1.62	15.31	48.28			157.69		-			88.24	24.78	63.46	22.85	65.39	6832
4.10	3.92	5.56			45.68		trace			21.09	12.00	9.09	7.14	13.95	W1382/51
4.32			1.33	3.22	28.85		pres.			11.01	11.01	-	5.89	5.12	W1383/51
3.04	18.31	83.81			228.90		trace			130.83	27.54	103.29	23.92	106.91	9929
	10.18	27.61			141.79		pres.			49.95	10.01	39.94	12.48	37.47	W1393/51
	3.20	10.10			20.16		pres.			17.58	4.00	13.58	4.30	13.28	W1392/51
	19.98	30.31			199.37		trace			65.24	15.51	49.73	16.78	48.46	W1385/51
1.28	0.87	1.02			7.70		trace			6.18	4.39	1.79	2.87	3.31	W1386/51
6.39	4.34	6.11			68.43		-			25.28	15.26	10.02	7.67	17.61	W1387/51
6.87	6.65	5.76			70.71		trace			30.18	18.52	11.58	10.36	19.74	W1388/51
10.98	5.74			1.26	69.01		trace			27.79	23.02	4.77	9.99	17.80	W1390/51
3.68	3.82	13.20			31.45		12.00			29.63	12.60	17.03	0.24	21.39	W1337/51
2.50	2.68	3.21			26.48		pres.			15.36	9.76	5.60	6.79	8.57	W1391/51
1.31	2.99	5.05			30.32		pres.			16.31	8.51	7.80	6.96	9.35	W1389/51
11.19	8.15	1.25			133.45					32.13	24.02	8.11	10.73	21.40	D.Chem. sample from 141
0.04	4.7	10.5			42.5	2.4			2.8	25.9	11.0	14.9	10.5	15.4	D.Chem. ft. 16.1.47
3.8	4.9	3.8			31.1	0.3			1.0	20.1	11.0	9.1	7.5	12.6	D.Chem. 12.2.42.
	4.2	15.7			41.9	0.2			3.2	32.2	12.0	20.0	12.0	20.0	D.Chem.
9.39			9.77	6.02	65.73					17.05	17.05	-	5.90	11.15	D.Chem.
8.02	8.82	2.98			80.14		trace			29.44	18.99	10.45	9.48	19.96	D.Chem.
5.65	2.42				22.04		trace			14.28	12.26	2.02	5.55	8.73	D.Chem.
2.07	2.63	3.88			10.86		trace			14.27	8.02	6.25	5.55	8.72	D.Chem.

Average Rainfall

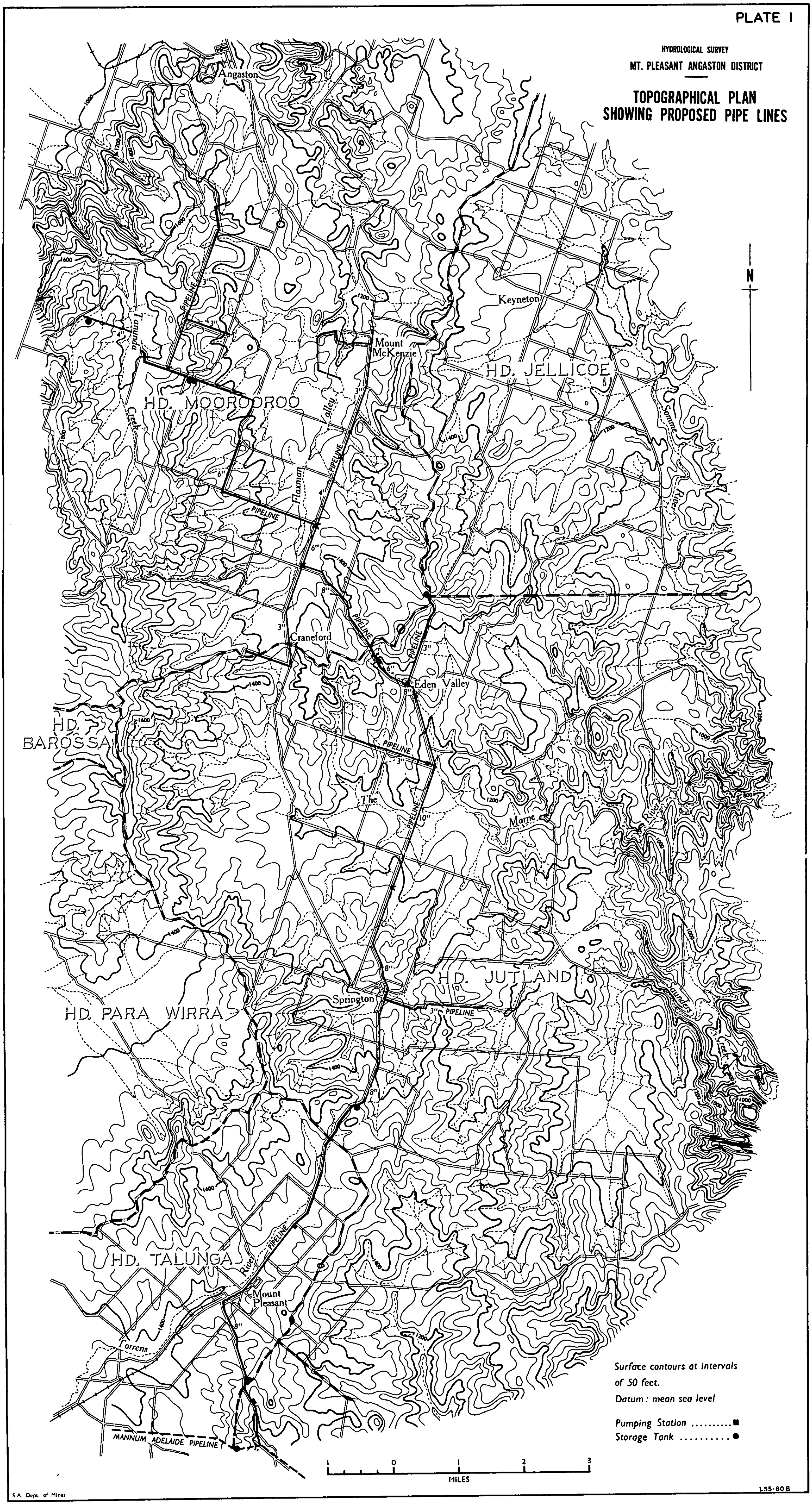
Table No. VI

Station	Period of records	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Angaston	62 years to 1948	0.90	0.77	0.94	1.73	2.39	3.03	2.68	2.99	2.57	1.89	1.30	1.08	22.27
Collingrove	78 years to 1950	0.84	0.87	1.04	1.83	2.69	3.41	3.14	3.27	2.87	2.08	1.36	1.05	24.32
Keyneton	46 years to 1955	0.74	0.92	0.72	1.26	2.51	2.74	2.94	3.04	2.48	1.93	1.11	1.06	21.45
Mount Pleasant	79 years to 1955	0.98	0.93	1.01	2.14	2.47	3.86	3.56	3.53	3.05	2.38	1.43	1.12	26.84

Rainfall figures supplied by the Commonwealth of Australia Meteorological Branch.

HYDROLOGICAL SURVEY
MT. PLEASANT ANGASTON DISTRICT

TOPOGRAPHICAL PLAN SHOWING PROPOSED PIPE LINES



Surface contours at intervals of 50 feet.
Datum : mean sea level

Pumping Station ....■
Storage Tank ....●

S.A. Dept. of Mines

L55-80 B

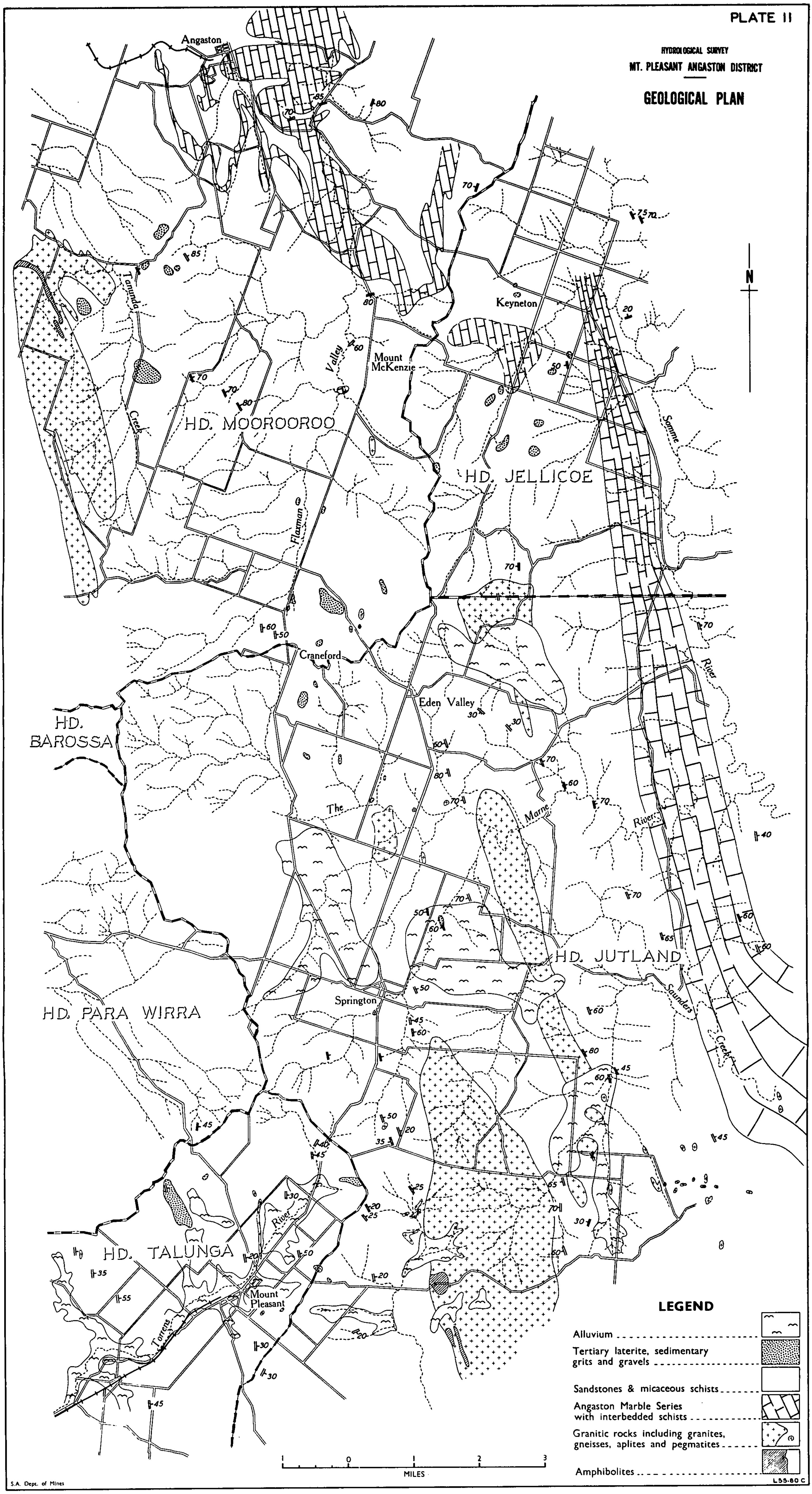


PLATE II
HYDROLOGICAL SURVEY
MT. PLEASANT ANGASTON DISTRICT
GEOLOGICAL PLAN
N
Angaston
Keyneton
Mount McKenzie
Tanunda Creek
Flaxman Valley
HD. MOOROOROO
HD. JELLICOE
Somme
Craneford
Eden Valley
River
HD. BAROSSA
The Marne River
HD. JUTLAND
Saunders Creek
Springton
HD. PARA WIRRA
HD. TALUNGA
Torrens River
Mount Pleasant
MILES
LEGEND
Alluvium
Tertiary laterite, sedimentary grits and gravels
Sandstones & micaceous schists
Angaston Marble Series with interbedded schists
Granitic rocks including granites, gneisses, aplites and pegmatites
Amphibolites
S.A. Dept. of Mines
L55-80 C

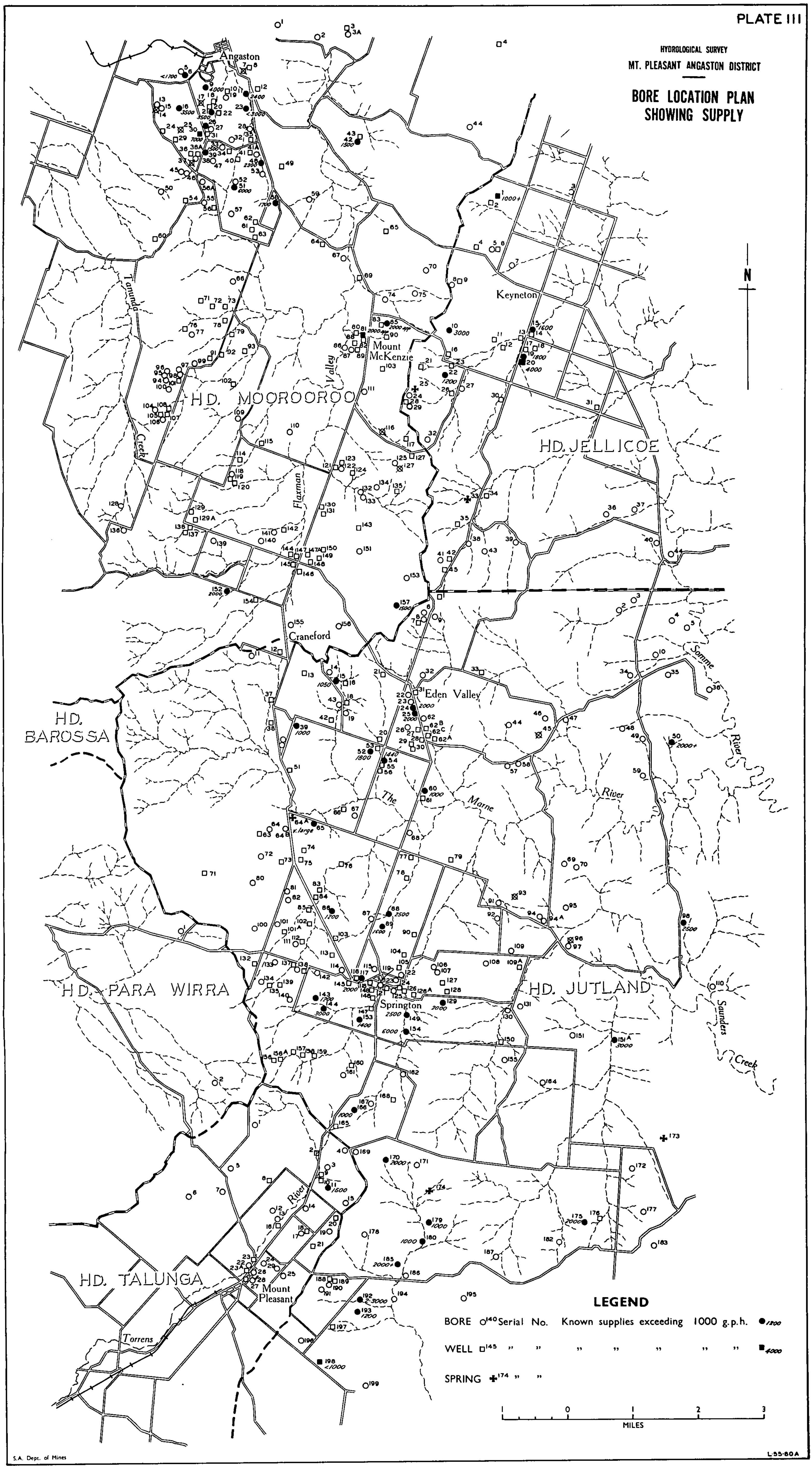


PLATE III
HYDROLOGICAL SURVEY
MT. PLEASANT ANGASTON DISTRICT
BORE LOCATION PLAN
SHOWING SUPPLY
N
Angaston
Keyneton
Mount McKenzie
HD. MOOROOROO
HD. JELLICOE
Tanunda Creek
Flaxman Valley
Craneford
Eden Valley
HD. BAROSSA
The Marne River
Somme River
HD. PARA WIRRA
HD. JUTLAND
Springton
Saunders Creek
HD. TALUNGA
Mount Pleasant
Torrens
River
LEGEND
BORE O140 Serial No. Known supplies exceeding 1000 g.p.h. ●1200
WELL □145 " " " " " " " ■4000
SPRING ✚174 " "
1 0 1 2 3
MILES
S.A. Dept. of Mines
L.55-80A

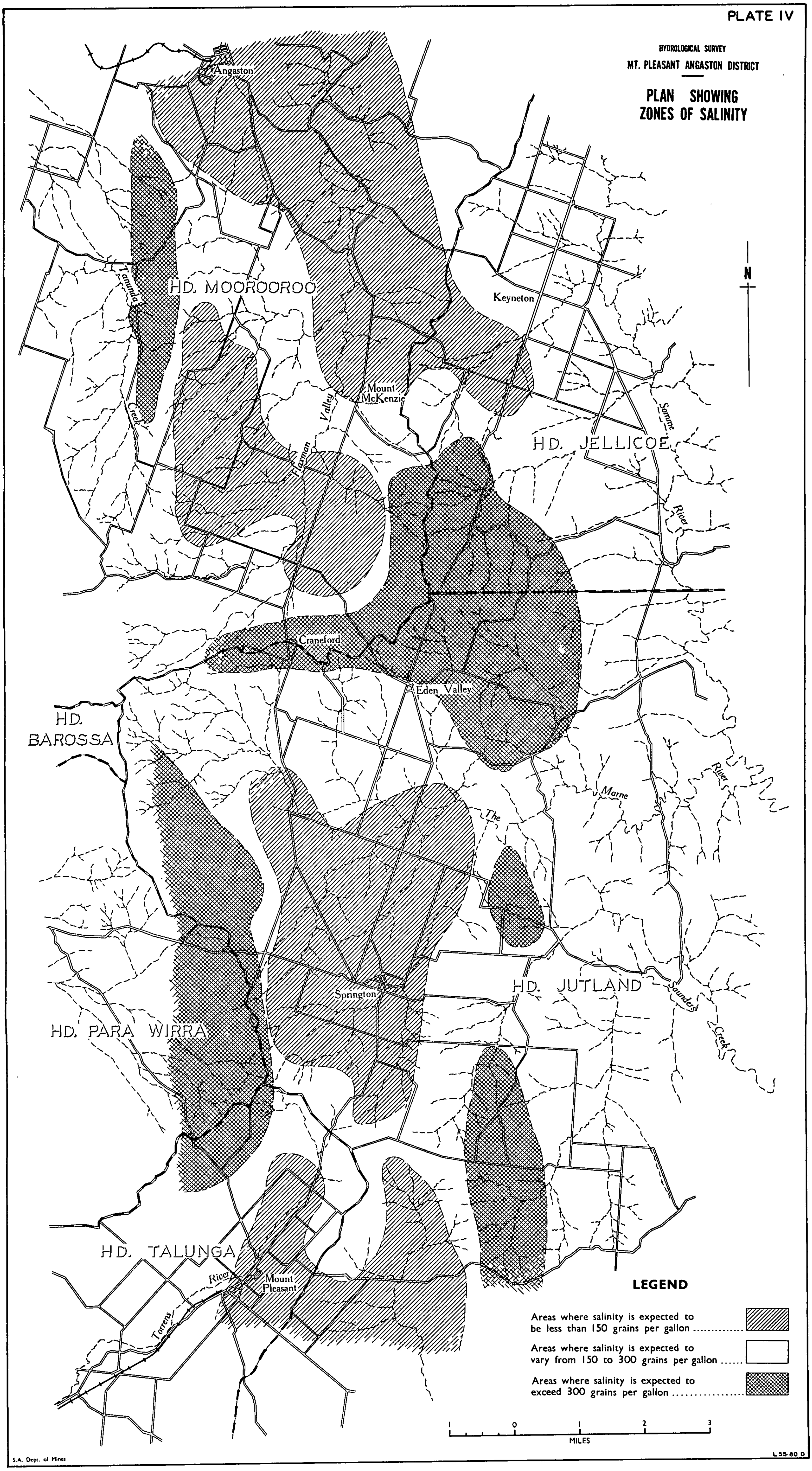


PLATE IV
HYDROLOGICAL SURVEY
MT. PLEASANT ANGASTON DISTRICT
PLAN SHOWING
ZONES OF SALINITY
N
Angaston
HD. MOOROOROO
Tanunda Creek
Keyneton
Mount McKenzie
Flaxman Valley
HD. JELLICOE
Somme River
Craneford
Eden Valley
HD. BAROSSA
The Marne River
Springton
HD. JUTLAND
Saunders Creek
HD. PARA WIRRA
HD. TALUNGA
Torrens River
Mount Pleasant
LEGEND
Areas where salinity is expected to be less than 150 grains per gallon
Areas where salinity is expected to vary from 150 to 300 grains per gallon
Areas where salinity is expected to exceed 300 grains per gallon
1 0 1 2 3
MILES
S.A. Dept. of Mines
L55-60 D

20. DICKINSON, S. B.—
The Structural Control of Ore Deposition in some South Australian Copper Fields, Part 1 (with maps). 28th February, 1942. (*Out of print*).

21. DICKINSON, S. B.—
The Structural Control of Ore Deposition in some South Australian Copper Fields, Part 2 (with maps). 1st February, 1944. Price 5s.

22. WARD, L. KEITH—
The Search for Oil in South Australia (with map). 17th October, 1944.

23. WARD, L. KEITH—
The Occurrence, Composition, Testing, and Utilization of Underground Water in South Australia, and the search for further supplies (with maps). 13th September, 1945. Price 7s. 6d.

24. MILES, KEITH R.—
The Geology of the South Para Dam Project (with maps and appendices). 1st September, 1948. Price 7s. 6d.

25. BARNES, T. A.—
Underground Water Survey of Portion of the Murray Basin—Counties Albert and Alfred (with maps and appendix). 15th May, 1950. Price 7s. 6d.

26. OFFICERS OF THE SOUTH AUST. DEPT. OF MINES AND THE C.S.I.R.O.—
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27. MILES, KEITH R.—
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28. GASKIN, A. J. AND SAMSON, H. R. (C.S.I.R.O.)—
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29. SPRIGG, R. C.—
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The Geology and Iron Ore Resources of the Middleback Range Area (with maps, addendum, and appendices). 1954. Price 10s.

34. CAMPANA, B. AND KING, D.—
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Notes on the Recovery of Copper from its Ores by Leaching and Precipitation, in the United States of America, and on Appliances used in connection therewith. 16th March, 1916. Price 3s. 6d.

2. CONNOR, J. D.—
Notes on—
I. The Leaching of Copper Ores from Mount Coffin.
II. Wet Gravity Concentration of Pyritic Ore from Nairne.
III. The Milling of Barytes at Aldgate.
IV. The Treatment of Copper Ore from the Prince Albert Mine. 19th March, 1917. Price 3s. 6d.

RECORDS OF THE MINES IN SOUTH AUSTRALIA

BROWN, H. Y. L.—
Record of the Mines of South Australia (Fourth Edition, with map). 1908 (*Out of print*).

Reviews of Mining in the State of South Australia.

A Short Review of Mining Operations during the year 1903. No. 1 (*Out of print*)*.

Review of Mining Operations, commencing 1st January, 1904. Nos. 2 to 6, inclusive. (*Out of print*)*.

Review of Mining Operations, published half-yearly, from period commencing 1st July, 1907. Nos. 7 to 26, inclusive. (*Nos.* 7 *to* 20, *and* 21, 25 *and* 26 *out of print*)*.

Mining Review, published half-yearly. Nos. 27 to 104 inclusive. (*Nos.* 27, 28, 29, 31, 34, 37, 58, 59, 60, 61, 62, 65, 74, 75, 76, 77, 78, 79, *and* 81 *out of print*). Price 3s. 6d. each.

INDEX

MINING REVIEW, No. 65 and following numbers to 71. 73, 83, 89, and 98.
Index to Mining Reviews, etc., with references to the Record of Mines, (1908 ed.)

HANDBOOK ON PROSPECTING IN SOUTH AUSTRALIA

A summary of the State's mineral resources and an outline of methods of exploration and development—Mineral Reserves, Prospecting, Treatment and Marketing of Minerals, Departmental Aid for Prospecting, Mining Legislation, etc., 1952. Price 5s. (Interstate price 7s. 6d.).

HANDBOOK ON URANIUM PROSPECTING IN SOUTH AUSTRALIA

A summary of uranium and thorium minerals in South Australia, including location of uranium deposits. radiation detection instruments used in prospecting, rewards for discoveries, Departmental testing of samples, purchase of ores, mining legislation, etc., (with coloured photos. of South Australian uranium minerals), 1954. Price. 3s. 6d.

MINING REGULATIONS

Regulations under the Mining Act, 1930-46, with Index. Price, 2s. 6d.
Regulations under the Mining (Petroleum) Act, 1940. Price, 1s.
Regulations under the Mines and Works Inspection Act, 1920-55.

* Reviews Nos. 1 to 7, inclusive, are incorporated in the Record of Mines, 1908.

[*Continued overleaf*

REPORTS OF INVESTIGATIONS

1. **WARD, L. KEITH—**
"Fluorine in South Australian Underground Waters"
24th June, 1949

2. **CHUGG, R. I.—**
"The Hydrology of the Barossa Valley"
31st May, 1954

3. **CAMPANA, B. and WILSON, R. B.—**
"The Geology of the Jervis and Yankalilla Military Sheets"
With contributions by A. W. G. Whittle
28th February, 1954

4. **CAMPANA, B.—**
"The Geology of the Gawler Military Sheet"
With contributions by M. F. Glaessner and A. W. G. Whittle
23rd July, 1954

5. **REYNER, M. L. and PITMAN, R. K.—**
"The Geology of the Serle Military Sheet"
(With Appendix)
22nd February, 1954

6. **REYNER, M. L.—**
"The Geology of the Peake and Denison Region"
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