DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

REPT.BK. 79/31

CURDIMURKA 1:250 000 SHEET WATER WELL SURVEY

GEOLOGICAL SURVEY

By

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and

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ENGINEERING DIVISION

Rept.Bk.No. 79/31
G.S. No. 6150
Eng. No. 77/66
D.M. No. 98/79

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DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

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CURDIMURKA 1: 250 000 SHEET WATER WELL SURVEY

ABSTRACT

A hydrological survey to update information on the Curdimurka sheet was carried out during October 1978. Approximately 70 water wells were located, including 24 flowing wells which were photographed. Groundwater is used for stock and domestic purposes. Salinity varies greatly from 1200 mg/l to 21420 mg/l. Standing water levels vary from flowing wells to depths of up to 52 m. The main aquifer system is the Algebuckina Sandstone which is the main aquifer of the Great Artesian Basin and its depth and pressure increase in a northerly direction. The Tertiary-Quaternary aquifers are mainly associated with drainage lines; salinities are quite variable, ranging from 1531 mg/l to 21420 mg/l. Yields in the unconfined aquifers range from 2 m^3/day to 655 m^3/day while flowing wells yield between 27 m^3/day to 6820 m^3/day. Recharge to the Tertiary-Quaternary sediments is from local rainfall enhanced along drainage lines. The Algebuckina Formation receives most of its recharge from the eastern States (mainly Queensland). Outcrops of Algebuckina Sandstone, the main artesian basin aquifer, occur along Finniss Creek where it is thought the only direct recharge along the southern boundary takes place. There are no forseeable pollution problems in the area.

INTRODUCTION

A water well survey of the Curdimurka 1: 250 000 sheet was carried out during October 1978. The main objective was to provide basic data on hydrogeology of the area for the proposed geological map. Headworks of all flowing wells were photographed for future recognition and to assist the Drilling Branch with any rehabilitation programmes. (see appendix I).

A water sample from each flowing well was collected in a plastic airtight container and brought back to Adelaide for full analysis.

The Curdimurka sheet, in the northern pastoral region of the State lies between latitudes 29°00' and 30°00' and longitudes 136°30' and 138°00'. Pastoral stations include Stuart Creek, Finniss Springs, Muloorina, Callanna, Witchelina, Anna Creek and a small eastern portion of Billa Kalina (Fig. 1).

PHYSICAL FEATURES

Topography

The area can be considered as four natural divisions:

1. Large expanses of salt lakes which form an impenetrable barrier across the northern section of the sheet.
2. The western portion which consists of flat stony plateaux with interspersed table lands, mesas and buttes dissected by large drainage channels flowing northward to Lake Eyre South.
3. Rugged eroded hills of the Willouran Ranges providing continuous Proterozoic basement rock outcrop and associated creeks and drainage channels in the south eastern corner.
4. The remaining portion of the sheet is covered by longitudinal sand dunes associated with interdunal claypans and salt lakes.

Climate

The region has an arid climate with hot summers and mild dry winters. There is no dominant seasonal rainfall pattern but higher rainfall generally occurs during the summer months, this being quite often due to thunderstorm activity. Average rainfall at Anna Creek Station is 145 mm and has ranged from 32 mm (1972) to 425 mm (1974). Average rainfall at Marree is 174 mm and has ranged from 41 mm (1967) to 409 mm (1950). (see Fig. 2a & 2b).

Vegetation

The vegetation reflects the severity of the climate by its sparseness. Mulga and various shrubs together with saltbush, bluebush, spinifex and a brief seasonal growth of grasses are the essential vegetation over most of the area. River gums and lignum occur along drainage channels while bare stony table land and gypsiferous flats are common throughout the region. Mulga covered outcrops are common throughout the Willouran Ranges in the south eastern portion. Ephemeral grasses and wild flowers bloom after heavy rainfall.

Land Use

Land usage is confined to sheep and cattle within the dog fence while only cattle grazing takes place outside of it.

Surface Hydrology

There are six major surface drainage features, these being Warriner, Dillina, Stuart, Gregory, Alberrie and Kenneberry Creeks. These creeks originate from ranges south and southwest of the sheet and drain to Lake Eyre South. In the drainage systems of these creeks there are many tributaries arising from localised areas of high relief. In the south western corner of the sheet, which includes an extended finger of the Willouran Ranges many fast flowing ephemeral streams occur. Along the plains adjacent to the creeks, large areas of swamps and flood plains occur. There are many small insignificant salt lakes and clay pans which drain the sandstone areas.

HYDROGEOLOGY

Aquifers

Sediments of Tertiary-Quaternary age form the upper aquifer of the region. These mainly comprise fine sands and gravels with sandy clays and interbedded gravel lenses, clays, feldspathic/cross bedded feldspathic sandstone and basal conglomerates.

Many wells were dug into this shallow aquifer along creeks where recharge after heavy rains is of maximum benefit.

The Cretaceous relatively impermeable sediments provide a confining bed for the pressure water of the main aquifer of the basin. These are the Oodnadatta Formation, consisting of a marine sequence of sands, silts and clays, with a fine grained basal sandstone and the Bulldog Shale, comprising mainly shale with calcareous nodules. Wells tapping this aquifer are far too saline for anything but stock usage. Most artesian wells draw their supplies from the Algebuckina Sandstone of Late Jurassic Age, comprising mainly fine to coarse sandstone, and this aquifer has been extensively developed for pastoral and domestic purposes. Mound springs are prevalent, possibly along a fault zone or unconformable junction between basement and the pressure aquifers and form a natural outlet for the pressure waters.

No wells have been drilled into the Proterozoic basement rocks which are exposed in the Willouran Ranges, and there are no known aquifers (see Fig. 3).

Recharge

The unconfined aquifer is locally recharged through rainfall and run-off along drainage channels. Most station wells are dug or drilled alongside water courses to obtain maximum benefit from any recharge available. A decrease in salinity is believed to be due to the recent good rains.

The artesian aquifer recieves its main recharge from the eastern States (mainly Queensland). However, some recharge is thought to occur throughout the area due to the close proximity of the aquifer to the surface and the eroded state of the confining bed. Outcrops of Algebuckina Sandstone, the main

aquifer of the artesian basin occurs along Finniss Creek where it is probable that the only direct recharge along the southern boundary takes place.

Standing Water Level

Water levels in the Tertiary-Quaternary sediments range from 1 to 52 metres below the surface depending on topography. Water in these sediments rises to varying heights due to the topographic pressure effects. Seasonal variations and effects of recharge may have considerable effects on the standing water levels.

Wells into the artesian pressure aquifer flow continuously.

Salinity

Salinity of groundwater varies depending on the aquifer penetrated. In the Tertiary-Quaternay aquifers, salinities range from 1531 to 21420 mg/1 with an average of approximately 3500 mg/1. Salinities of the artesian aquifers vary according to well head temperatures. When converted back to the standard 25^{o}C they range from 1200 to 8900 mg/1 with an average of approximately 5500 mg/1. Well head temperatures range from 30^{o}C to 55^{o}C with salinities generally 500 to 1500 mg/1 higher than before conversion to standard temperature (see Fig. 4).

Yield

Yields range from 2 m^3/day to 655 m^3/day in the unconfined aquifers with an approximate average of 120 m^3/day. The flowing wells yield between 27 m^3/day to 6820 m^3/day with an average of 550 m^3/day.

Well Construction and Equipment

Older wells (now mostly abandoned) were hand dug and timbered to below the water table; they are now unequipped. Drilled wells in the non-artesian area are all steel cased and

slotted in the aquifer. Most are equipped with windmills with some having a jack pump on standby for windless periods. Wells within the artesian area are cased with either steel or PVC to the aquifer. More recently slotted liners, and, in some cases, screens, have been used whereas in earlier days when the artesian sediments were reached the casing was stopped and the bore completed open hole. Of the artesian wells, most are flowing uncontrolled while some have been equipped with stop valves regulating the flow (see appendix II).

Mound Springs

The pressure waters of the Great Artesian Basin have a number of natural outlets in the form of mound springs within the Curdimurka sheet. These waters are in some cases very hot and carry in solution much mineral content which is deposited on exposure to the atmosphere. As a result, a sandy or limy crust tends to build up around the spring, eventually producing a mound; some in this region are up to 36 metres above plain level and covering several square kilometres in extent, indicating that gigantic springs occurred here in the past. Recent mound springs are at a lower elevation with no large supplies, mainly soakages. The most recent active springs have only a thin surface coating of limestone, but the main body of these are composed of sand and mud. Many mound springs in the area have been cased, with piping leading to tanks and troughs for stock usage. For complete details and photographs of mound springs refer to: Sampling and Measurement of Mound Springs, Great Artesian Basin South Australia. Progress Report No. 2. Marree, Curdimurka and Billakalina sheets. (M.A. COBB. Rept. Bk. No. 75/90).

Groundwater Pollution

Due to the lack of industry and population, there does

not seem to be any danger of groundwater pollution.

Summary and Conclusions

Generally, groundwater is readily obtainable throughout the sheet. Most supplies come from the very shallow artesian aquifer through wells or mound springs. Very few graziers utilize the Tertiary-Quaternary aquifer because usually yields are small and salinities are quite variable. Due to many unusually good seasons several new wells have been drilled to open up large untouched areas of grazing land where water has been a problem. The Department is also carrying out some rehabilitation and replacement drilling throughout the area.

Most graziers consider the legislation to be a step in the right direction to alleviate the enormous waste of water occurring with uncontrolled artesian wells.

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REFERENCES

Kerr, D.S. Hydrology of the Great Australian Artesian Basin in South Australia. - A preliminary report. - Rept. Bk. No. 57/52 (Unpublished).

Shepherd, R.G. Underground Water Resources of South Australia. Geol. Surv. S. Aust. Bull. 48.

PLATE 1

ALBERRIE CREEK BORE (Artesian)

Showing completed well head with stop valve

Neg. 30286

PLATE 2

ANGAS BORE (Artesian)

Showing pools and swampy conditions caused by uncontrolled flow.

Neg. 30278

APPENDIX I

PHOTOGRAPHS OF FLOWING WELLS

Well Name	Unit No.	Neg. No.
STRANGWAY SPRINGS BORE	6239-01	30282
LETHBRIDGE BORE	6239-02	30281
BERESFORD BORE	6239-04	30279
ANGAS BORE	6239-06	30278
WELCOME BORE	6239-07	30291
McEWINS BORE	6239-09	30284
COWARD SPRINGS BORE	6239-13	30292
PRICES BORE	6239-15	30293
NUNN'S BORE	6239-18	30289
BEAUTIFUL VALLEY BORE	6239-19	30283
PAM'S BORE	6239-27	30280
CHARLES ANGAS BORE	6438-01	30276
ALBERRIE CREEK BORE	6438-03	30286
COORYANNA BORE	6438-04	30275
CALLANNA BORE	6438-05	30271
MAYNARDS BORE	6438-79	30270
CURDIMURKA BORE	6339-02	30290
NEW YEARS GIFT BORE	6338-02	30285
BEATRICE BORE	6338-07	30288
VENABLE BORE	6338-08	30287
LAKE LETTY NO. 3 (BIG BORE)	6439-05	30273
CROWS NEST BORE	6439-06	30274
LAKE LETTY NO. 1 BORE	6439-08	30272
MORRIS CREEK BORE	6439-09	30277

APPENDIX II

Summary of Water Well Data

CONTENTS PAGE

(1: 100 000 sheets)

CURDIMURKA 1: 250 000 sheet
1: 100 000 enlargements

6239	6339	6439
6238	6338	6438

Note: Wells are numbered serially in each 1: 100 000 sheet.

~~SUMMARY OF WATER WELLS~~ 1:100,000 SHEET No. ~~238~~

(1)

UNIT No	DEPTH. m	SWL m	SALINITY mg/l	YIELD kl/DAY	AQUIFER	Casing DIAM-mm / DEPTH m.	EQUIPMENT	WELL NAME.	REMARKS.
6238000WP00001	—	spring	10853	small flow		—	—	ANNA SPRINGS.	mound spring - unable to locate.
" WW00002	32.9	17.8	1531	22-33		—	—	No1 BORE	Abandoned - unable to locate.
" WW00003	27.7	15.5	10870	11		—	—	No2 BORE	No supply - Abandoned - unable to locate.
" MW00004	99.1		ENDEAVOUR		OIL	COMPANY			MINERAL EXPLORATION.
" MW00005	10.7			"	"	"			" "

DEPARTMENT OF MINES & ENERGY - SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No.

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam.-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
6238000WP									
" WP00001	-.	spring	10853	small flow		-	-	ANNA SPRINGS	Mound spring - unable to locate
" WW00002	32.9	17.8	1531	22-33		-	-	No. 1 BORE	Abandoned - unable to locate
" WW00003	27.7	15.5	10870	11		-	-	No. 2 BORE	No supply - Abandoned - unable to locate
" MW00004	99.1		ENDEAVOUR		OIL	COMPANY			MINERAL EXPLORATION
" MW00005	10.7		"		"	"			" "

DEPARTMENT OF MINES & ENERGY - SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No. 6239

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
6239000									
WW00001	111.25	FLOWS	5800	5455		-	unequipped	Strangeway Springs Bore	ABANDONED - UNTROLLED FLOW
" WW00002	91.44	FLOWS		1637		.076	Stop value	Lethbridge Bore	Stock usage - controlled Flow
" WP00003	-	-	200	-	-	-	-	Beresford DAM	Dam Water - not sampled
" WW00004	94.49	FLOWS	3713	786		152 0-77-1 102 0-92-7	Stop value	Beresford BORE	ABANDONED - CONTROLLED FLOW

~~SUMMARY OF WAT[illegible] WELLS~~ 1:100000 SHEET No [illegible]239

(2)

UNIT No	DEPTH. m	SWL m	SALINITY mg/l	YIELD Kl/DAY	AQUIFER	Casing DIAM. mm / DEPTH m.	EQUIPMENT.	WELL NAME.	REMARKS.
6239000WW00001	111.25	FLOWS	5800	5455		—	unequipped	STRANGWAY SPRINGS BORE.	ABANDONED – UNCONTROLLED FLOW.
" WW00002	91.44	FLOWS		1637		·076 / —	Stop Value.	LETHBRIDGE BORE.	STOCK USAGE - CONTROLLED FLOW.
" WP00003	—	—	200	—	—	—	—	BERESFORD DAM	Dam water – not sampled.
" WW00004	94.49	FLOWS	3713	786		152 / 0-77·1 102 / 0-92·7	Stop value	BERESFORD BORE	ABANDONED – Controlled flow.
" WP00005	—	Spring.	4350	small		—	nil	BERESFORD SPRING	STOCK USAGE – mound spring.
" WW00006	97.23	Flows.	3300	393		152 / ?	unequipped	ANGUS BORE.	STOCK USAGE - Uncontrolled flow.
" WW00007	30.48	Flows	4400	404		152 / ?	unequipped	WELCOME BORE.	" " " "
" WW00008	30.48	Flows	—	76		152 / ?	—	NORTH CREEK BORE.	ABANDONED - Unable to locate.
" WW00009	45.6	Flows	5000	2182		152mm / ?	unequipped	McEWINS BORE	STOCK USAGE - Uncontrolled flow
" WW00010	60.96	Flows	3581	164		152 / ?	unequipped.	JERSEY SPRING BORE.	Abandoned - Unable to locate
" WW00011	11.30	Flows	—	—		102 / ?	unequipped	—	Mound spring - unable to locate.
" WW00012	19.20	Flows	—	—		127 / 0-12·15	unequipped	—	FLUORINE EXPL - mound spring - unable to locate.
" WW00013	63.40	Flows	3300	5455		152 / 0-58·8 203 / 0-11·9	unequipped.	COWARD SPRINGS BORE	ABANDONED - uncontrolled flow.
" WW00014	—	Spring	4287	seepage		—	nil	BLANCHE CUP SPRINGS.	MOUND SPRING – UNABLE TO LOCATE.
" WW00015	286.21	Flows	2700	52		102 / 0-~~2??~~·85	unequipped	PRICES BORE	Stock usage - uncontrolled flow.
" WP00016	—	Spring	3600	Poor		—	nil	HORSE'S SPRINGS	Abandoned – mound spring
" WP00017	—	Spring	3700	—		—	nil	COWARD SPRINGS.	stock usage – mound spring.
" WW00018	131.98	Flows	5100	2273		—	stop value.	NUNN'S BORE	Stock usage - uncontrolled flow.
" WW00019	42.0	Flows	6000	98		152 / —	stop value	BEAUTIFUL VALLEY BORE	stock usage - controlled flow.
" WP00020	—	spring	3990	—		—	nil	WARBURTON SPRING	stock usage - mound spring
" WP00021	—	spring	3198	—		—	—	—	mound spring – unable to locate.
" WP00022	—	Spring	2840	—		—	—	—	" " " " "
" WP00023	—	spring	3042	—		—	—	THE BUBBLER SPRING	" " " " "
" WP00024	—	spring	3150	—		—	—	—	mound spring – Dry during survey.
" WP00025	—	spring	6900	—		—	—	STRANGWAY SPRING.	mound spring - stock usage.
00026	NO FOLDER OR INFORMATION AVAILABLE ON THIS UNIT NO.								
WW00027	63.10	Flows	5250	382		102 / [illegible] 152 / [illegible]	Stop value	PAM'S BORE	D/H 8/3 - stock usage - controlled fl[illegible]

DEPARTMENT OF MINES & ENERGY - SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No.

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam.-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
6338000									
WP00001	-	Spring	1776	35		-	-	Fred's Spring	Many springs in area - unable to locate.
WW00002	72.2	Flows	2700	1364		152 mm -1.0-?m	unequipped	New Year's Gift's Bore	stock usage - uncontrolled flow.
WP00003	-	Spring	1920	5		76 mm -0.30-?	-	Smiths bore & springs	mound spring - stock usage
WP00004	-	Spring	1707	14		-	-	Humphries Bore	mound spring - unable to locate
WW00005	-	Spring	2205	23		-	-	Finniss Spring & Bore	mound spring - stock usage
WP00006	-	Spring	2400	35		52 mm -1.50-?m	-	Boopeechie Springs	Northern most mound spring - stock usage
WW00007	-	Flows	2800	129		76 mm -0.40-?	unequipped	Beatrice Bore & Spring	Stock usage - uncontrolled flow
WW00008	shallow	Flows	4550	409		127 mm -2.0-?	unequipped	Venable Bore	Stock usage - uncontrolled Flow
WP00009	-	Spring	3700	86		-	-	Bopeechee Spring	mound spring - unable to locate
WW00010	243.8	-	salty	-		-	-	-	Abandoned - backfilled
WW00011	3.1	Flows	8850			-	-	-	Unable to locate - owner has no knowledge of it
WW00012	-	-	-	-		-	-	-	Unable to locate - owner has no knowledge of it
WW00013	2.4	0.3	8045	soak		-	-	Three mile well	abandoned - backfilled
WP00014	-	Spring	21905	-		-	-	Sulphuric Springs	unalbe to sample - freshened by rainwater.
WW00015	15.2	-	-	0.11		-	-	Gregory Well	Unable to locate - Owner has no knowledge of it
WW00016	105.2	-	4642	16		-	-	Porters Hill Well	Area visited - unable to Locate
WW00017	121.9		4642	8		-	-	-	Abandoned - unable to
WW00018	23.8	-	too salty	-		-	-	-	" " locate

DEPARTMENT OF MINES & ENERGY – SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No.

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
WW00019	34.4	-	too salty	-		-	-	-	Abandoned - unable to locate
WP00020	-	Spring	1749	seepage		-	-	Fred Spring west	Many springs in area - unable to locate
WP00021	-	Spring	4400	26		-	-	Priscilla Spring	Mound spring - stock usage
00022		NO FOLDER OR INFORMATION AVAILABLE ON THIS UNIT						NO.	
00023		"	"	"	"		"	"	
00024		"	"	"	"		"	"	
MW00025	86.9			ENDEAVOUR OIL COMPANY					Mineral Exploration
MW00026	46.0				"	"	"		" "

~~SUMMARY OF WATER WELLS~~ 1:100000 SHEET No 1338

UNIT No	DEPTH. m	SWL m	SALINITY mg/l	YIELD kl/DAY	AQUIFER	Casing DIAM-mm / DEPTH m.	EQUIPMENT.	WELL NAME.	REMARKS.
6338000WP00001	—	spring	1776	35		—	—	FRED'S SPRING.	Many springs in area - unable to locate.
" WW00002	72.2	flows	2700	1364		152mm -1.0-? m	unequipped	NEW YEAR'S GIFT BORE.	stock usage - uncontrolled flow.
" WP00003	—	spring	1920	5		76mm -0.30-?	—	SMITHS BORE & SPRINGS	mound spring - stock usage.
" WP00004	—	spring	1707	14		—	—	HUMPHRIES BORE	mound spring - unable to locate.
" WW00005	—	spring	2250	23		—	—	FINNISS Spring & Bore	mound spring - stock usage
" WP00006	—	spring	2400	35		52mm -1.50-? m	—	BOOPEECHIESPRINGS	Northern most mound spring - stock usage
" WW00007	—	Flows	2800	129		76mm -0.40-?	unequipped	BEATRICE BORE & SPRING	stock usage - uncontrolled flow.
" WW00008	shallow	Flows	4550	409		127mm -2.0-?	unequipped	VENABLE BORE.	" " " "
" WP00009	—	spring	3700	86		—	—	BOPEECHEE SPRING.	mound spring - unable to locate.
" WW00010	243.8	—	salty	—		—		—	Abandoned - Backfilled.
" WW00011	3.1	Flows	8850	—		—	—	—	Unable to locate - Owner has no knowledge of it
" WW00012	—	—	—	—		—	—	—	" " " " " " " " "
" WW00013	2.4	0.3	8045	soak		—	—	THREE MILE WELL	Abandoned - Backfilled
" WP00014	—	spring	21905	—		—	—	SULPHURIC SPRINGS.	Unable to sample - freshened by rainwater.
" WW00015	15.2	—	—	0.11		—	—	GREGORY WELL	Unable to locate - Owner has no knowledge of it.
" WW00016	105.2	—	4642	16		—	—	PORTERS HILL BORE.	Area visited - unable to locate.
" WW00017	121.9		4642	8		—	—	—	Abandoned - unable to locate.
" WW00018	23.8	—	too salty	—		—	—	—	" " " "
" WW00019	34.4	—	too salty	—		—	—	—	" " " "
" WP00020	—	spring	1749	seepage		—	—	FRED SPRING WEST.	Many springs in area - unable to locate
" WP00021	—	spring	4400	26		—	—	PRISCILLA SPRING	Mound spring - stock usage.
00022	No FOLDER OR INFORMATION AVALIABLE ON THIS UNIT							NO.	
00023	"	"	"	"	"	"	"	"	
00024	"	"	"	"	"	"	"	"	
MW00025	86.9	ENDEAVOUR OIL COMPANY							MINERAL EXPLORATION.
MW00026	46.0			"	"	"			" "

DEPARTMENT OF MINES & ENERGY – SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No. 6339

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam-mm / Depth- m	EQUIPMENT	WELL NAME	REMARKS
6339000									
WP00001	-	Spring	3000	227		-	-	Emerald Spring	Mound spring - stock usage
WW00002	137.2	Flows	3300	393		102 mm 0-94.5m	Stop value	Curdimurka Bore	Domestic use - controlled flow
WP00003	-	Spring	2800	33		-	-	Jacob Creek	Area visited - unable to locate
WW00004	-	Flows	1729	409		-	-	Gosses Springs Bore	Area visited - unable to locate
WP00005	-	Spring	-	seepage		-	-	Walgarina Springs	Unable to determined correct spring - not sampled
WW00006	503.1	Flows	2230	3600	CHECK BORE CARD REMARKS		stop value	Jack boot Bore	Stock usage - controlled flow
WP00007	-	Spring	-	-		-	-	McLachlans Spring	Mound spring - unable to locate
WP00008	-	Spring	2200	8		-	-	Gosse Springs	mound spring - stock usage
?00009	NO FOLDER OR INFORMATION AVAILABLE ON THIS UNIT NO.								

~~SUMMARY OF WATER WELLS~~ 1:100000 SHEET No 6339

(4)

UNIT No	DEPTH. m	SWL m	SALINITY mg/l	YIELD Kl/DAY	AQUIFER	Casing DIAM- mm / DEPTH m.	EQUIPMENT	WELL NAME.	REMARKS.
6339000wp00001	—	spring	3000	227		—	—	EMERALD SPRING.	mound spring - stock usage.
" ww00002	137·2	Flows	3300	393		102mm / 0-94·5m	stop valve	CURDIMURKA BORE	Domestic use - controlled flow.
" wp00003	—	spring	2800	33		—	—	JACOB CREEK SPRING	mound spring - stock usage.
" ww00004	—	Flows	1729	409		—	—	GOSSES SPRINGS BORE	Area visited - unable to locate.
" wp00005	—	spring	—	seepage		—	—	Walgarina Springs	Unable to determine correct spring - not sampled
" ww00006	503·1	Flows	2230	3600		CHECK BORE CARD remarks.	stop valve.	JACK BOOT BORE.	STOCK usage - controlled flow.
" wp00007	—	spring	—	—		—	—	McLACHLANS SPRING.	mound spring - unable to locate.
" wp00008	—	spring	2200	8		—	—	GOSSE SPRINGS.	mound spring - stock usage.
" ? 00009		NO FOLDER OR INFORMATION AVALIABLE ON THIS UNIT No							

DEPARTMENT OF MINES & ENERGY – SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No.

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
6438000									
WW00001	-	Flows	1950	455		127 -0.40-?	unequipped	Charles Angas	Stock usage - uncontrolled flow.
WW00002	35.7	0.90	6700	-		152 -0.?	W/Mill	Theepa Bore	Stock usage - tank sample
WW00003	210.3	Flows	4750	27		102 -0.76.2	Stop value	Alberrie Creek Bore	Domestic use - Controlled flow
WW00004	91.44	+Flows	1390	good		-	unequipped	Cooryanna Bore	Stock usage - uncontrolled flow
WW00005	100.58	Flows	1820	43		-	Stop value	Callanna Bore	Stock usage - mound spring
WP00006	-	Spring	3350	good		-	-	Welcome Springs	Stock usage - mound spring
WP00007	-	Spring	8500	-		$4m^2$	W/Mill	Wangianna	Stock usage - mound spring
WW00008	12.2	-	16025	-		0.10-?	unequipped	Laidlana Well	Possibly wash away - unable to locate
WW00009	shallow	-	salt	-		-	unequipped	Mirra Well	" " " " "
WW00010	18.3	10.3	7426	131		152 mm -0.15-12.2	W/Mill	Mirra Bore	Stock usage - unable to sample
WW00011	18.9	-	fresh	2		-	unequipped	North Creek WELL	Possibly washed away - unable to locate
WW00012	13.7	6.40	1700	46		2 x 2.5m	W/mill & pump jack	Rischbieth Well	Stock usage - Bailer sample
WW00013	15.2	4.3	21420	-		-	unequipped	Bungarida Salt well	Possibly washed away - unable to locate
WW00014	2.4	0.61	5685	131		2.1^2_7m	-	Bungarida North well	Area visited - unable to locate.
WW00015	9.1	3.7	7035	small		-	-	Bungarida Well	" " " " " "
WW00016	3.4	1.8	10696	-		-	-	Bungarida South Well	" " " " " "
WW00017	38.7	6.1	10853	-		-	unequipped	Mount Well	Abandoned - back filled
WW00018	29.6	-	-	2		-	-	Chintapanna Well	Area visited - unable to locate
WW00019	24.7	17.10	5010	good		1 x 1.5m -1.00-	W/mill & pump jack	Kingston Well	Stock usage - abandoned

~~SUMMARY OF WATER WELLS~~ 1:100000 SHEET No 6438

(5)

UNIT No	DEPTH. m	SWL m	SALINITY mg/l	YIELD Kl/DAY	AQUIFER	Casing DIAM. mm / DEPTH m.	EQUIPMENT.	WELL NAME.	REMARKS.
6438000WW00001	—	Flows	1950	455		127 / -0.40-?	unequipped	CHARLES ANGAS BORE	stock usage - uncontrolled flow.
" WW00002	35.7	0.90	6700	—		152 / 0-?	w/mill	THEEPA BORE	stock usage - tank sample.
" WW00003	210.3	Flows	4750	27		102 / 0-76.2	stop valve	ALBERRIE CREEK BORE	Domestic use - controlled flow
" WW00004	91.44+	Flows	1390	good		—	unequipped	COORYANNA BORE	stock usage - uncontrolled flow
" WW00005	100.58	Flows	1820	43		—	stop valve	CALLANNA BORE.	stock usage - controlled flow.
" WP00006	—	spring	3350	good		—	—	WELCOME SPRINGS	stock usage - mound spring
" WP00007	—	spring	8500	—		4 m² / 0.10-?	w/mill	WANGIANNA SPRINGS.	stock usage - mound spring.
" WW00008	12.2	—	16025	—		—	unequipped	LAIDLANA WELL	Possibly washed away - unable to locate.
" WW00009	shallow	—	salt	—		—	unequipped	MIRRA WELL	" " " " " "
" WW00010	18.3	10.3	7426	131		152 mm / -0.15-12.2	w/mill	MIRRA BORE	stock usage - unable to sample.
" WW00011	18.9	—	fresh	2		—	unequipped	NORTH CREEK WELL	Possibly washed away - unable to locate
" WW00012	13.7	6.40	1700	46		2x2.5m / 0-?	w/mill & pump jack	RISCHBIETH WELL	stock usage - Bailer sample.
" WW00013	15.2	4.3.	21420	—		—	unequipped	BUNGARIDA SALT WELL	Possibly washed away - unable to locate.
" WW00014	2.4	0.61	5685	131		2.1 ²m / ?	—	BUNGARIDA NORTH WELL	Area visited - unable to locate.
" WW00015	9.1	3.7	7035	small		—	—	BUNGARIDA WELL	" " " " "
" WW00016	3.4	1.8	10,696	—		—	—	BUNGARIDA SOUTH WELL	" " " " "
" WW00017	38.7	6.1	10853	—		—	unequipped	MOUNT WELL	Abandoned - Backfilled
" WW00018	29.6	—	—	2		—	—	CHINTAPANNA WELL	area visited - unable to locate.
" WW00019	24.7	17.10	5010	good		1x1.5m / -100-?	w/mill & pump jack	KINGSTON WELL	stock usage - Abandoned
" WW00020	12.0	11.65	15000	good		1x1.5m / 0-?	unequipped	3 MILE WELL	Abandoned - Bailer sample
" WW00021	16.6	7.5	6200	Fair		1x1.5m / 0-?	w/mill	3 MILE WELL	stock usage - Bailer sample.
" WW00022	20.3	14.2	9100	Fair		1x1.5m / 0-?	w/mill	HOMESTEAD WELL	Abandoned - Bailer sample
" WP00023	—	spring	2750	good		76mm / -0.30-?	unequipped.	DAVENPORT SPRINGS	stock usage - mound spring
" WW00024	27.0	26.8	—	—		1x1.5m / 0-?	w/mill	HOMESTEAD WELL	Abandoned - unable to sample
" WW00025	17.1	15.5	5400	36		2x1.5m / 0-?	w/mill & pump jack	TOP MOUNT WELL	stock usage - Bailer sample.
" WW00026	32.0	17.8	5250	131		152mm / -0.10-?	w/mill	NETTING BORE.	stock usage - pumped sample

DEPARTMENT OF MINES & ENERGY - SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No. 6438

UNIT No. 6438000	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
WW00020	12.0	11.65	15000	good		1 x 1.5m 0-3	unequipped	3 mile well	Abandoned - Bailer sample
WW00021	16.6	7.5	6200	Fair		1 x 1.5m 0-?	W/Mill	3 Mile well	Stock usage - Bailer sample
WW00022	20.3	14.2	9100	Fair		1 x 1.5m 0-?	W/Mill	Homestead	Abandoned - Bailer sample
WP00023	-	spring	2750	good		76 mm -0.30-?	unequipped	Davenport Springs	Stock usage - mound spring
WW00024	27.0	26.8	-	-		1 x 1.5m 0.?	W/Mill	Homestead Well	Abandoned - unable to sample
WW00025	17.1	15.5	5400	36		2 x 1.5m 0-?	W/Mill & pump jack	Top Mountp Well	Stock usage - bailer sample
WW00026	32.0	17.8	5250	131		152 mm -0.10-?	W/ Mill	Netting Bore	Stock usage - pumped sample
WW00027	91.4	-	-	4		-	-	Top Mount Bore	Area visited - unalbe to locate
WW00028	36.6	14.3	9000	76		152 mm -0.20-?	W/Mill	Kingston Bore	Stock usage - pumped sample
MW000029	18.3	6.1	15000	11		-	W/Mill	Kingston Bore	Stock usage - pumped sample
MW00030			AUSTRALIAN SELECTION PTY. LTD.						Mineral Exploration
MW00031			"		"	"	"		Mineral Exploration
WW00033	16.8	-	2730	soakage		-	-	Cockatoo Bore	Washed away - unable to locate
WW00034	39.3	-	7500	131		152 mm -0.25 - 31.1 m	W/Mill	Apollo No.1	Stock usage - pumped sample
MW00035) MW00072)			MINERAL EXPLORATION WELLS						NOT LOCATED.
WP00073	-	Spring	2280	-		-	-	Welcome Springs	Mound spring - stock usage
WP00074	-	Spring	4500	-		-	-	Welcome Springs	Mound spring - western outlet - stock usage
WP00075	-	Spring	5000	-		-	-	Welcome Springs	Mound spring - southern outlet - stock usage
WP00076	-	Spring	4286	43		-	-	Welcome Springs	Many springs in area - unable to locate.

~~SUMMARY OF WATER WELLS~~ 1:100000 SHEET No 1438

UNIT No	DEPTH. m	SWL m	SALINITY mg/l	YIELD kl/DAY	AQUIFER	Casing DIAM-mm / DEPTH m.	EQUIPMENT.	WELL NAME.	REMARKS.
6438000 WW00027	91·4	—	—	4		—	—	TOP MOUNT BORE	Area visited - unable to locate
" WW00028	36·6	14·3	9000	76		152 mm / -0·20-?	w/mill	KINGSTON BORE.	Stock usage - pumped sample.
" MW00029	18·3	6·1	15000	11		—	Jet pump	—	Abandoned - unable to locate.
" MW00030			AUSTRALIAN SELECTION PTY LTD						MINERAL EXPLORATION
" MW00031				"	"	"	"		MINERAL EXPLORATION
" WW00032	16·8	—	2730	soakage		—	—	COCKATOO BORE	WASHED AWAY - UNABLE TO LOCATE.
" WW00033	31·1	15·2	7500	131		152 mm / -0·25-31·1 m	w/mill	APOLLO No1 BORE	Stock usage - pumped sample.
" WW00034	39·3	—	6145	55		—	—	APOLLO No2 BORE	Area visited - unable to locate.
" MW00035 } " MW00072 }			MINERAL EXPLORATION WELLS.						~~NOT LOCATED.~~
" WP00073	—	Spring	2280	—		—	—	WELCOME SPRINGS.	mound spring - stock usage.
" WP00074	—	spring	4500	—		—	—	WELCOME SPRINGS	mound spring - western outlet - stock usage
" WP00075	—	spring	5000	—		—	—	WELCOME SPRINGS	mound spring - southern outlet - stock usage.
" WP00076	—	spring	4286	43		—	—	DAVENPORT SPRINGS	Many springs in area - unable to locate.
" MW00077	70·1		ENDEAVOUR	OIL	COMPANY				MINERAL EXPLORATION.
" WW00078	190·0	52·0	4400	655		152 mm / -0·20-?	unequipped	UTAH BORE WP099	stock usage - mineral well converted to water well.
" WW00079	—	flows	1780	—		152 mm / 0-?	stop valve	MAYNARDS BORE.	stock usage - controlled flow. Temp No XG15

DEPARTMENT OF MINES & ENERGY - SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No. 6438

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
6438000									
MW00077	70.1		ENDEAVOUR		OIL COMPANY				Mineral Exploration
WW00078	190.0	52.0	4400	655		152 mm 0.20 - ?	unequipped	Utah Bore WP099	Stock usage - mineral well converted to water well
WW00079	-	Flows	1780	-		152 mm 0-?	Stop value	Maynards Bore	Stock usage - controlled flow Temp. No. XG15

~~SUMMARY OF WATER WELLS~~ 1:100000 SHEET No '439

UNIT No	DEPTH m	SWL m	SALINITY mg/l	YIELD kl/DAY	AQUIFER	Casing DIAM. mm / DEPTH m.	EQUIPMENT	WELL NAME.	REMARKS.
6439000WP00001	0.3	—	115896	—		—	—	LAKE EYRE WATER	Causeway washed out - unable to sample
" WW00002	2.1	1.2	3000	—		—	W/mill	THREE MILE WELL	Pumped sample - stock usage.
" WW00003	17.7	8.5	5200	14		152mm -0.70 - ?	unequipped	HOMESTEAD BORE	Domestic use - Abandoned
" WW00004	457.0	—	SALT	—		—	—	—	Unable to locate - Owner has no knowledge of it
" WW00005	489.0	Flows	1430	6137		127mm 0-485m 203mm 0-9.8m	no control valve	BIG BORE	stock usage - uncontrolled flow
" WW00006	381.8	Flows	1500	6819		127mm 0-379.4 203mm 0-10.7m	unequipped.	CROWS NEST BORE	" " " "
" WW00007	335.2	Flows	—	—		—	—	MORRIS' BORE	Unable to locate - Owner has no knowledge of it
" WW00008	213.4	Flows	1290	136		—	W/mill	LAKE LETTY No. 1	stock usage - controlled flow.
" WW00009	566.3	Flows	1950	1818		152mm ?	unequipped	MORRIS CREEK BORE	stock usage - uncontrolled flow.
" WW00010	—	—	—	—		—	—	KALATINKA WELL	Abandoned - Backfilled
" WW00011	—	DRY	—	—		—	—	—	" "
" WW00012	70.1	2.1	186140	—		152mm ?	unequipped	—	Causeway washed away - unable to sample.
" WW00013	71.6	1.8	253356	—		152mm ?	unequipped	—	Bore in Lake Eyre - Lake Eyre flooded.
" WP00014	—	Soak	55192	—		—	—	OLD SOAK	Abandoned - unable to locate.
" WW00015	—	—	1885	—		—	—	NEW WELL	Abandoned - Backfilled
" WP00016	—	—	20300	—		—	—	GOYDER CHANNEL	EWS STAFF GAUGE - unable to sample.
" WW00017	—	4.05	1930	—		152mm -0.15 - ?	unequipped	—	Not in use - Bailer sample - Domestic.

DEPARTMENT OF MINES & ENERGY - SOUTH AUSTRALIA

SUMMARY OF WATER WELLS

1 : 100,000 SHEET No. 6439

UNIT No.	DEPTH (m)	S.W.L. (m)	SALINITY (mg/ℓ)	YIELD (Kℓ/day)	AQUIFER	CASING Diam-mm / Depth-m	EQUIPMENT	WELL NAME	REMARKS
6439000 WP00001	0.3	-	115896	-		-	-	Lake Eyre Water	Causeway washed out - unable to sample
WW00002	2.1	1.2	3000	-		-	W/Mill	Three Mile Well	Pumped sample - stock usage
WW00003	17.7	8.5	5200	14		152 mm -0.70-?	unequippped	Homestead Bore	Domestic use - Abandoned
WW00004	457.0	-	SALT	-		-	-	-	Unable to locate - Owner has no knowledge of it
WW00005	489.0	Flows	1430	6137	0-485mm	127mm 0-9.8m	203mm no control value	Big Bore	Stock usage - uncontrolled flow
WW00006	381.8	Flows	1500	6819	0-379.4	127mm 0-10.7m	203mm unequipped	Crows Nest Bore	" " " " "
WW00007	335.2	Flows	-	-		-	-	Morris' Bore	Unable to locate - owner has no knowledge of it
WW00008	213.4	Flows	1290	136		-	W/Mill	Lake Letty No. 1	Stock usage - controlled flow
WW00009	566.3	Flows	1950	1818		152mm ?	unequipped	Morris Creek	Stock usage - uncontrolled flow.
WW00010	-	-	-	-		-	-	Kalatinka Well	Abandoned - backfilled
WW00011	-	Dry	-	-		-	-	-	" "
WW00012	70.1	2.1	186140	-		152mm ?	unequipped	-	Causeway washed away - to sample
WW00013	71.6	1.8	253356	-		152mm ?	unequipped	-	Bore in Lake Eyre - Lake Eyre flooded.
WP00014	-	soak	55192	-		-	-	OLD SOAK	Abandoned - unable to locate
WW00015	-	-	1885	-		-	-	New Well	Abandoned - backfilled
WW00016	-	-	20300	-		-	-	Goyder Channel	E & WS Staff Gauge - unable to sample
WW00017	-	4.05	1930	-		152mm -0.15-?	unequipped	-	Not in use - Bailer sample - Domestic.

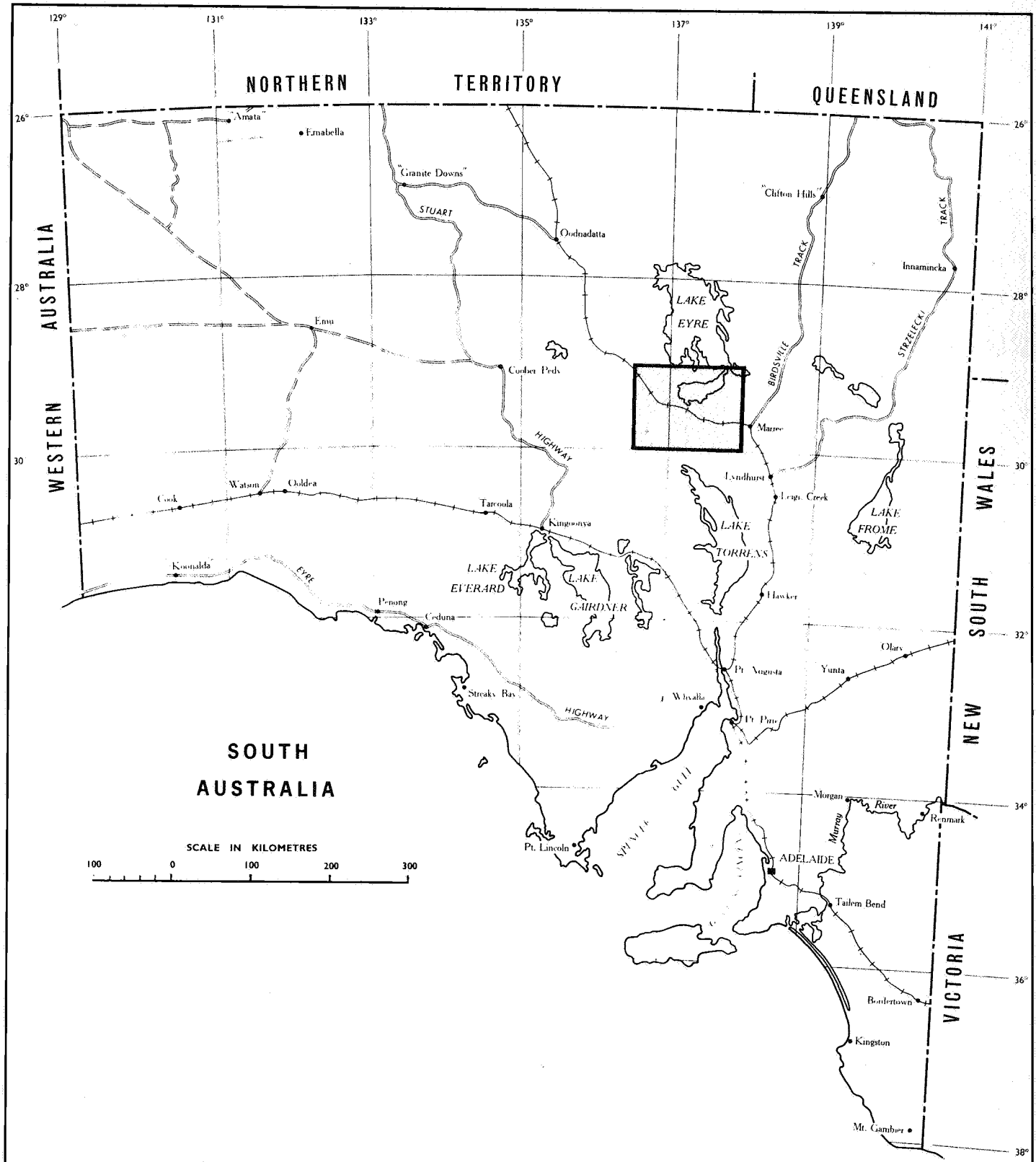
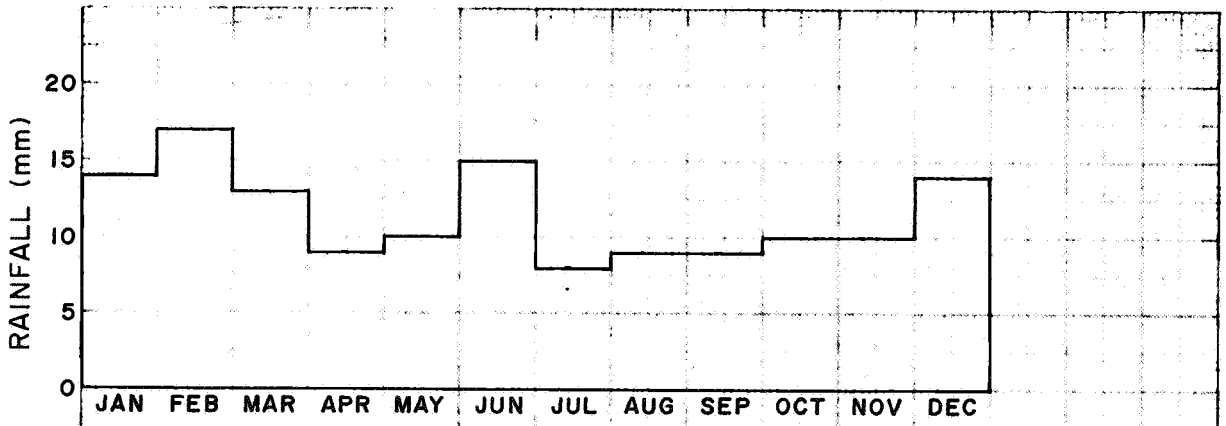


FIG. 1

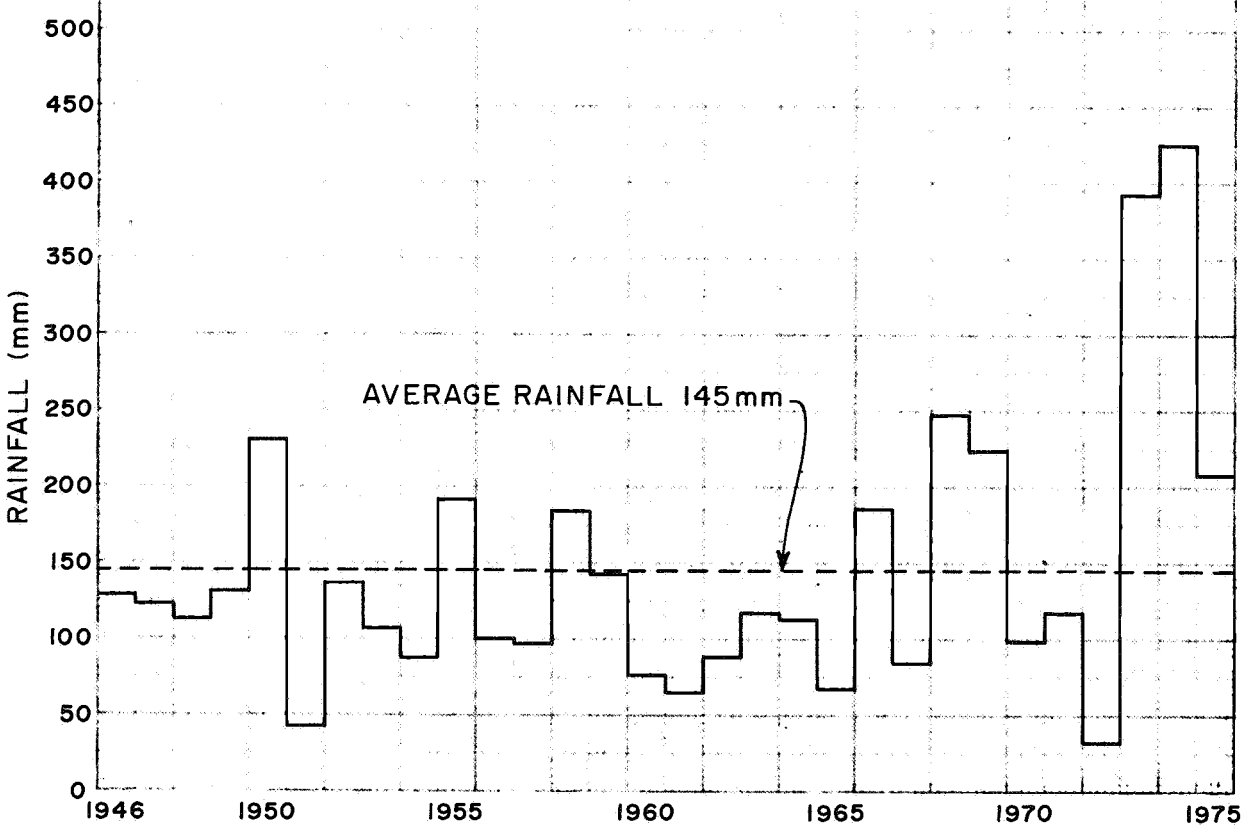
DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

Compiled.	CURDIMURKA 1:250,000 WATER WELL SURVEY	Date: JAN. 79
Drn. M.W. Ckd.	LOCALITY PLAN	Drg. No. S13866

P.F. No. S5850 994.2



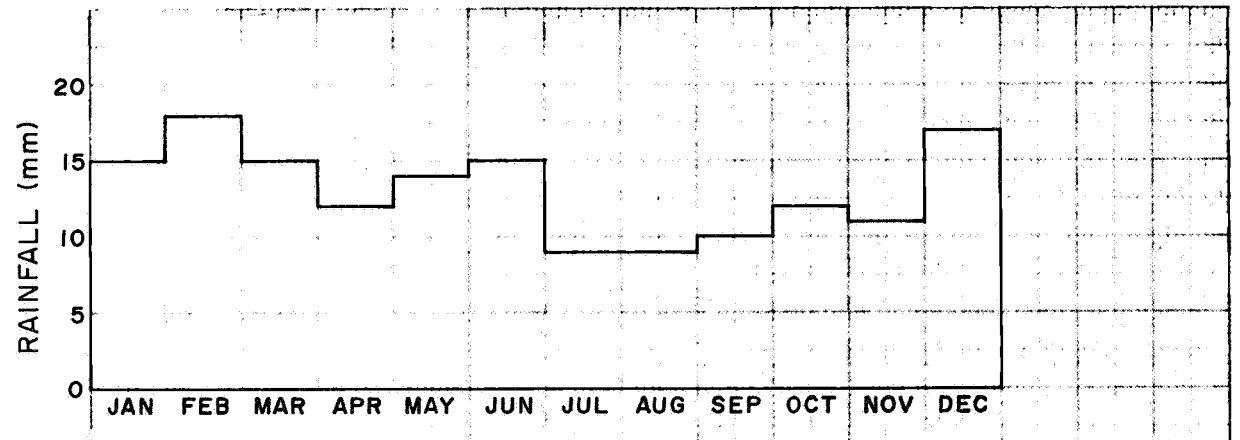
MEAN MONTHLY RAINFALL - ANNA CREEK STATION - 1883 TO 1975



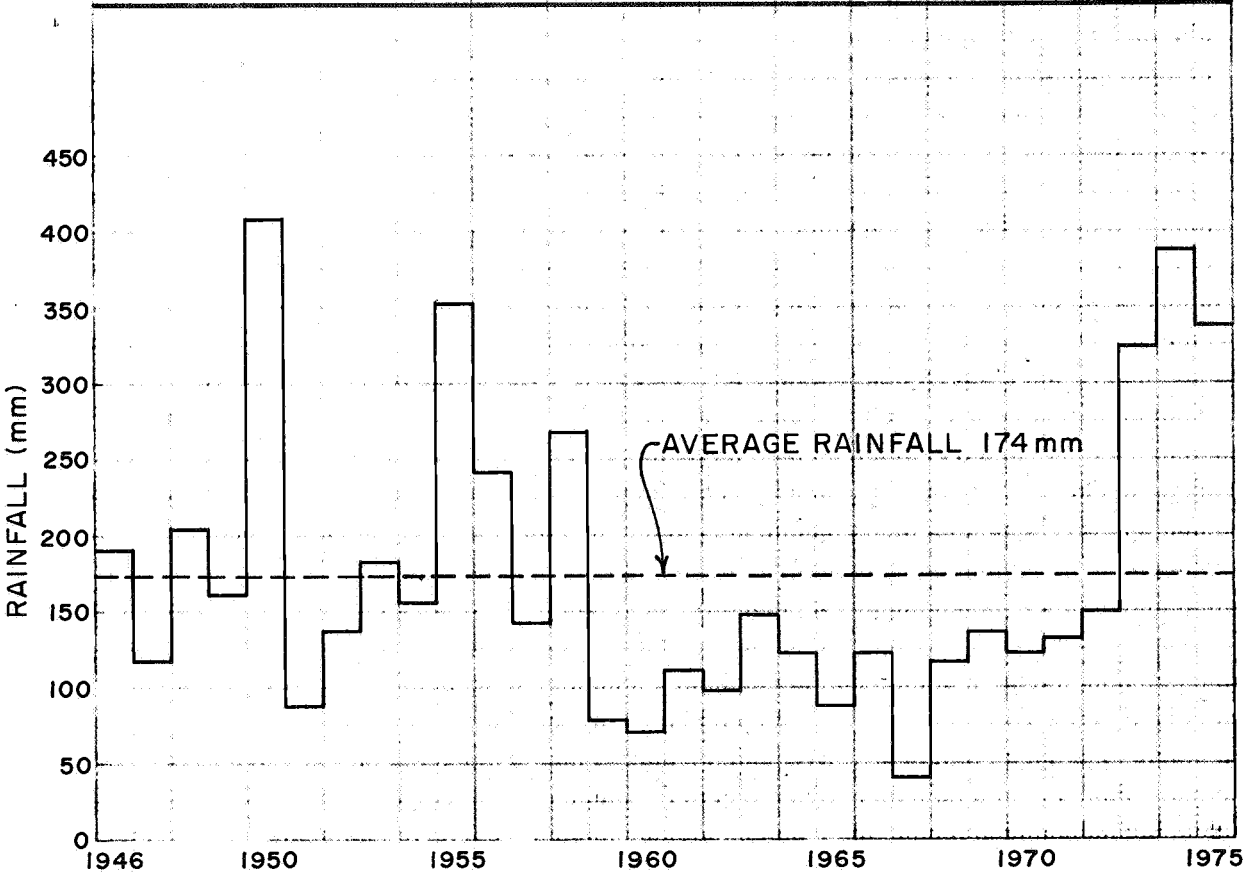
ANNUAL RAINFALL - ANNA CREEK STATION - 1946 TO 1975

FIG. 2a

	DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	SCALE
COMPILED J. SAFTA	CURDIMURKA 1:250,000 WATER WELL SURVEY	DATE JAN. 79
DRN M.W. CKD	RAINFALL STATISTICS ANNA CREEK STATION	PLAN NUMBER S13867



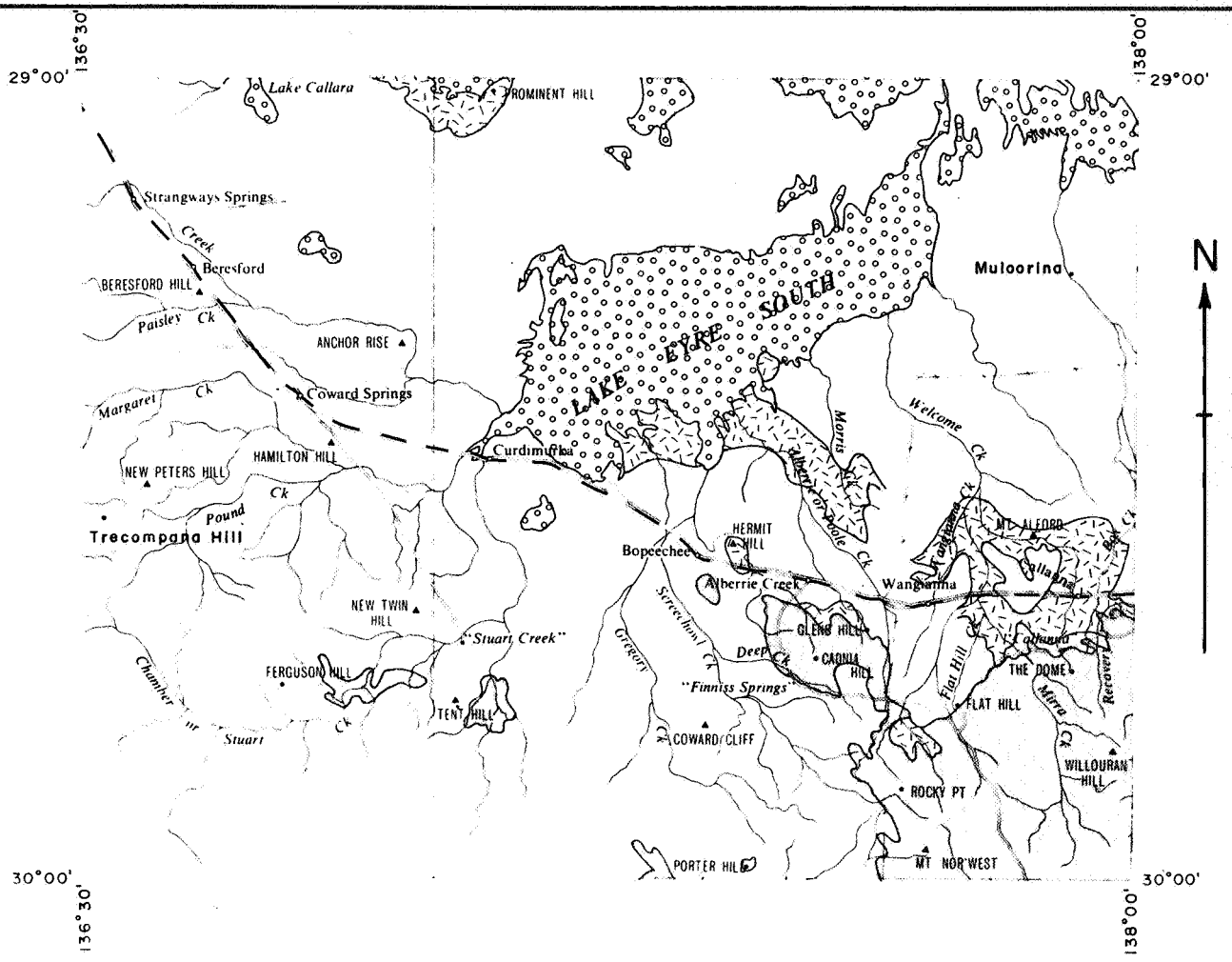
MEAN MONTHLY RAINFALL - MARREE P.O. - 1885 TO 1975



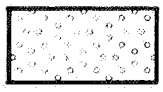
ANNUAL RAINFALL - MARREE - 1946 TO 1975

FIG. 2b

	DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	SCALE
COMPILED J. SAFTA	CURDIMURKA 1:250,000 WATER WELL SURVEY	DATE JAN 79
DRN M.W. CKD	RAINFALL STATISTICS	PLAN NUMBER
	MARREE P.O.	S13868

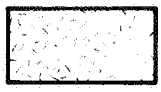


CAINOZOIC

Lake Deposits – gypseous muds, silt, sand and salt . . . . . 

Alluvial sand silt and clay with siliceous duricrust (mainly in the south-west). . . . . 

MESOZOIC

Sandstone, siltstone shale and limestone including Oodnadatta Formation, Bulldog Shale, Cadna-Owie Formation and Algebuckina Sandstone . . . . . 

PROTEROZOIC

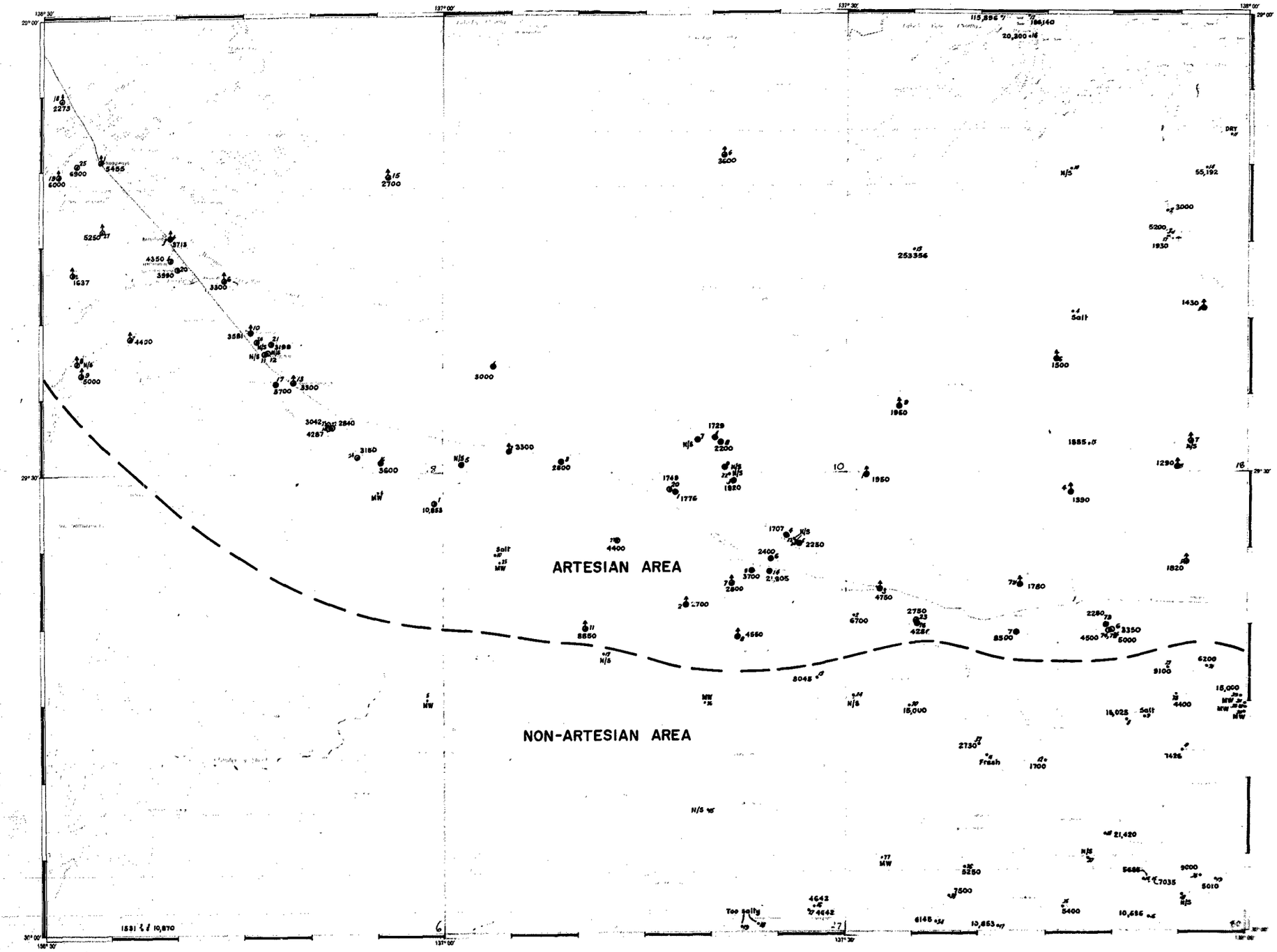
Adelaidean dolomite, limestone, sandstone, quartzite and slate overlying Willouran Group in the Willouran Ranges . . . . . 

FIG. 3

	DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	SCALE 1:1,000,000
COMPILED J. SAFTA	CURDIMURKA 1:250,000 WATER WELL SURVEY	DATE JAN. 79
DRN M.W. CKD	GENERALIZED GEOLOGY	PLAN NUMBER S13869

AUSTRALIA 1:250,000

BORE LOCATION SERIES



REFERENCE

C438 - 35 to 72 see Env. 884 & 1161

- Flowing well (Artesian)
- Mound spring
- N/S Not sampled during survey
- MW Mineral exploration well

Bore with Salinity in mg/l 5200
Town
Dam
Main Road
Road
Track
Railway
Ephemeral Stream
Ephemeral Swamp
Division
Triangulation Station
Astronomical Station
Mine

The location of bores on this plan is derived from Departmental and private sources.
Bore data may be available from Departmental records upon application.

Base compilation from Division of National Mapping published map

ADJOINING 1:250,000 SHEETS

WARRINA	LAKE EYRE	KOPPERAMANNA
BILLAKALINA	CURDIMURKA	MARREE
KINGOONYA	ANDAMOOKA	COPLEY

SCALE 1:250,000

1:100,000 ENLARGEMENTS

6239	6339	6439
6238	6338	6438

FIG. 4

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA

CURDIMURKA 1:250,000 WATER WELL SURVEY

WELL LOCATION AND SALINITY

1:250,000

79-52