

300mE 400mE 500mE 600mE

NORTH EAST TASMANIA GROUNDWATER RESOURCE PROJECT

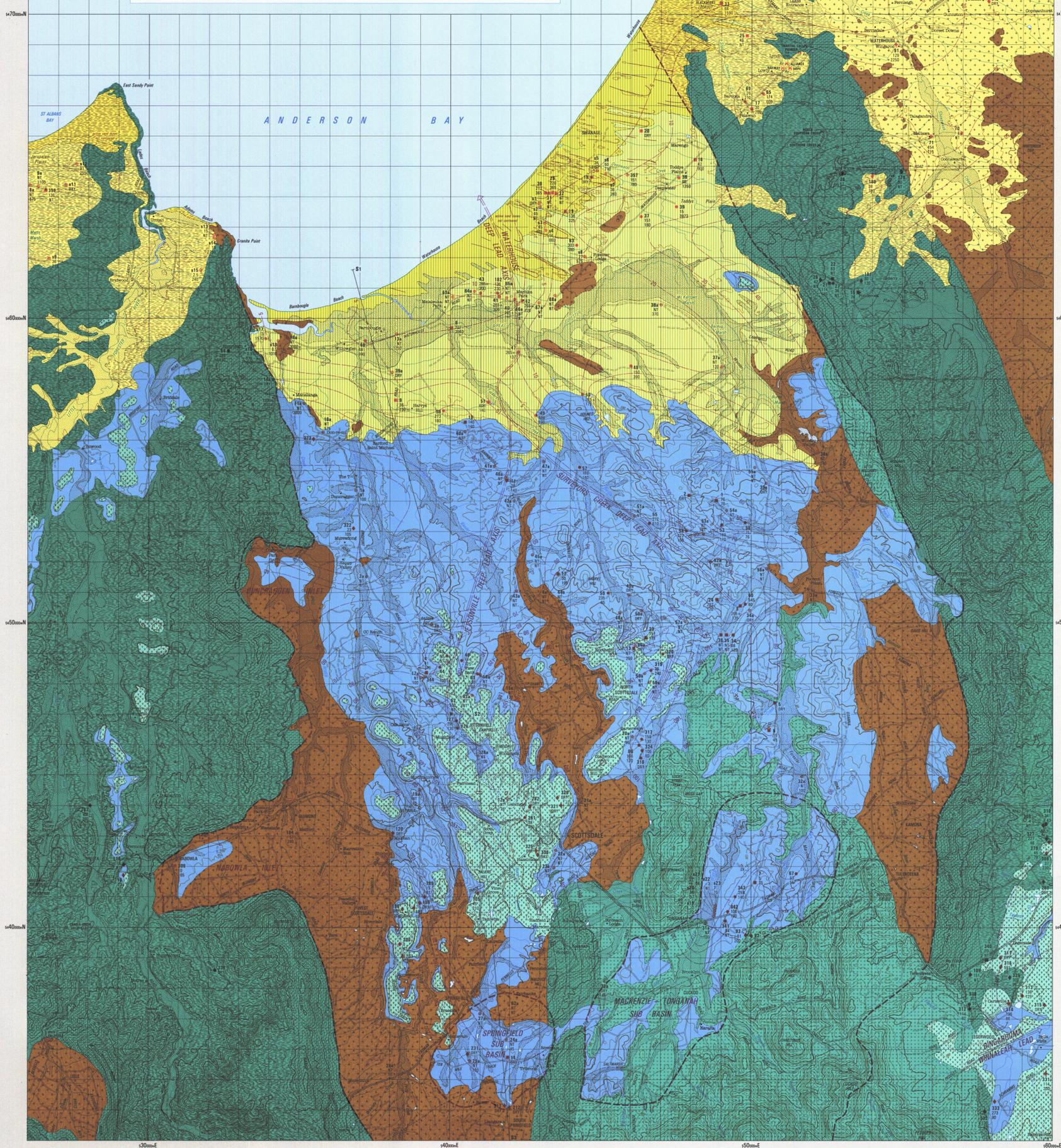
MAP 2 HYDROGEOLOGY OF THE SCOTTSDALE SEDIMENTARY BASIN

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CARTOGRAPHY BY J. H. CLARKE

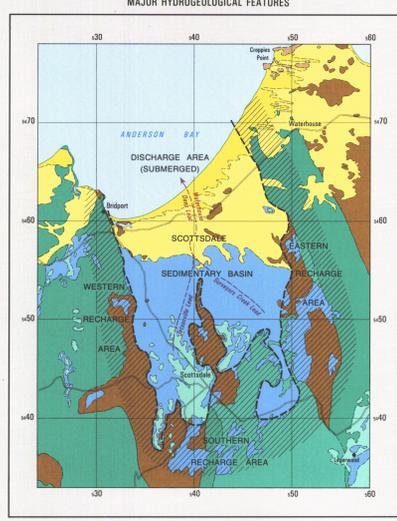
SCALE 1 : 60 000

SURFACE CONTOUR INTERVAL 20 METRES



AQUIFER TYPE	LITHOLOGY	AGE	BORE YIELD (litres)		WATER SALINITY (mg/l)	
			RANGE	AVERAGE	RANGE	AVERAGE
UNCONSOLIDATED SEDIMENTS	COASTAL DUNES	Aeolian sand - fine to medium grain size, well sorted, frequently with clay at the base. Marlstone sediments underlying coastal sediments.	3 - 220*	67.9	240 - 2250	829.6
	COASTAL PLAIN	Sand, silt and clay with minor silt beds and occasional organic clay layers. Blue Tur Batholith underlying coastal sediments.	136 - 227*	171.3	780 - 2040	1390
	SEDIMENTARY BASIN	Coastal sediments overlying Tertiary sediments. Fine, angular quartz gravels and coarse to medium white sand, kaolinitic clay, clayey sand and sandy clay. Coarse quartz gravels and micaceous clay frequently at or near the base of the sequence.	5 - 661*	199.3	55 - 3972	283.8
FRACTURED ROCK	HIGHLY FRACTURED	Alternating beds of siltstone, sandstone and cleaved mudstone or slate - well jointed and tightly folded. (Marlstone Beds)	4 - 591	144.7	43 - 910	193.4
	SPARSELY FRACTURED	Permian and spotted pelite beds - contact metamorphosed zone, jointed and folded, quartz veining common. (Marlstone Beds)	36 - 303	131.9	55 - 5830	1256.7
	DEEPLY WEATHERED AND VERTICAL	Basalt (Scottsdale Basin) - continuously clay of deeply weathered and decomposed basalt. Sequence of red soil, clay, sandstone and thin silt layers. (Ringsdown Lead - vertically jointed hard rock with minor vesicular basalt).	8 - 136	47.3	125 - 460	255
UNFRACTURED ROCK	Few widely spaced and tight joints. Devonian (Scottsdale Batholith) - equigranular, fine to medium grained. Adamellite and granite (Blue Tur Batholith) - coarse grained and porphyritic.	DEVONIAN - CARBONIFEROUS	10 - 61	35.5	165 - 240	202.5
UNTESTED	Tight vertical joints. Dolerite: fine to medium grained (Kamona Typal). Low coastal promontories only (Craggie Point). Locally underlies coastal sediments.	JURASSIC	-	-	-	-

- Aquifer type boundary - position approximate.
- Aquifer boundary - position inferred.
- Geological boundary - position approximate.
- Geological boundary - transitional.
- Mine - abandoned.
- Abandoned workings.
- Abandoned workings - abandoned.
- Prospect - quarry or mine.
- Quarry - abandoned.
- Cable test drill.
- Rotary drill.
- Down-hole hammer test.
- Diamond drill.
- Auger drill (at or near base).
- Borehole location and water number.
- Groundwater yield (litres).
- Groundwater salinity (mg/l).
- DRY - Groundwater not encountered.
- 200 - Maximum output of pump.
- NT - Groundwater not tested.
- 3000+ - Salinity greater than 3000 mg/l - field test only.
- Some active and stabilised dams indicated.
- Contours on the potentiometric surface - 5m and 10m interval above sea level.
- Contours on the potentiometric surface in the Tertiary basalt.
- Tertiary aquifer deep lead - position approximate.
- Basin margin - position approximate.



AQUIFERS

Aquifers are zones or strata within geological units from which usable quantities of water can be extracted.

The three broad groupings of aquifers are:

UNCONSOLIDATED OR SUPERFICIAL SEDIMENTS:

Integrating aquifers, i.e. the groundwater is stored between the grains or particles making up the material. These aquifers may be recharged by the rainfall of local extent. Where the clay and silt content of these deposits is low, as in many sand and gravel aquifers, good yields can often be obtained in bore.

SEDIMENTARY BASIN DEPOSITS (TERTIARY SEDIMENTS):

These aquifers are also integrative, more extensive and thicker than the superficial deposits. Sand and gravel aquifers with little or no clay and of fine higher bore yields than those with a greater percentage of these finer grained materials.

FRACTURED OR FISSURED ROCKS:

Groundwater is stored in joints and fractures in these aquifers. The rate at which water can be extracted depends on the openness of the fractures and their interconnection. Consequently in the Marlstone Beds it is considered to be mainly stored in and to move through joints and along bedding planes although integrative porosity may make a minor contribution to the total water available.

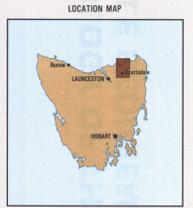
In some cases the main or most prospective aquifer may occur at depth with another aquifer type overlying it.

DEPARTMENT OF MINES DRILLERS

Cable test drilling by C. Nugent 1968-70; T. Johnson 1969-72; J. Hammett 1969-71; M. C. Inger 1970-75; M. J. Kerrison 1972-82; Rotary and down hole hammer drilling by T. J. Green 1971-75; R. M. Richardson 1972-82; R. Stevens 1981-85; Diamond drilling by C. Locke 1970-71; S. W. Baker 1977-78.

PRIVATE CONTRACT DRILLERS

Cable test drilling by R. J. Spaulding 1973; Rotary and down hole hammer drilling by G. Spaulding 1974.



Base map adapted and redrawn from 1 : 100 000 series sheets produced by the Department of Environment and Planning, Hobart.

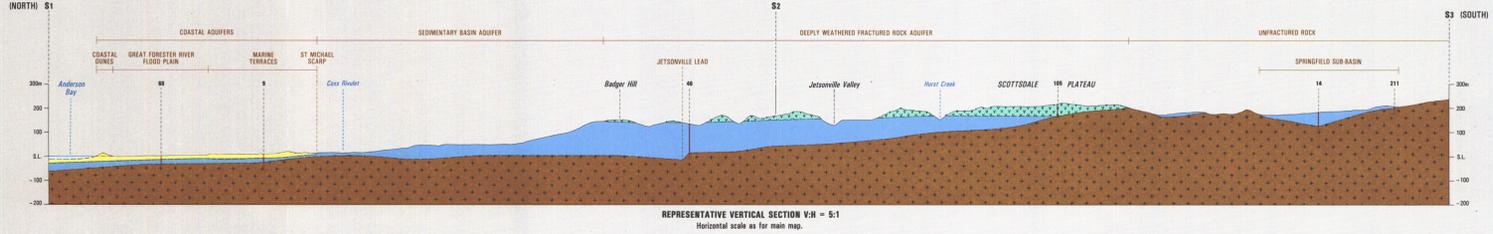
Geology adapted and redrawn from Hobart Bay, Fingert River, Bockhills, Ringsdowna Geological Atlas 1:63 380 and 1:50 000 series sheets

Hydrogeological map produced by the Cartographic Section of the Geological Survey, Department of Mines W. I. Matthews, B.Sc., Acting Deputy Chief Geologist, Engineering Geology and Groundwater Section.

Compiled under the direction of M. R. Hargreaves, Deputy Secretary and Acting Chief Geologist.

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REPRESENTATIVE VERTICAL SECTION V-H = S1
Horizontal scale as for main map.