

TR3-117-119

Notes on the Possibilities of Obtaining Underground Water at Various Localities

by F. Blake

The Property of C. Alcorso at Berriedale

The owner desires to ascertain the possibilities of obtaining underground water suitable for irrigation, by boring.

This property comprises the southern part of a small peninsula rising about 60 feet above, and jutting into, the River Derwent at Berriedale.

The rocks consist principally of sandstones but these are overlain about the hill-top by shales. The formation dips at 5° to the north-west.

Owing to the small catchment area, the quick run-off of rain-water down the moderately steep slopes to the river in all directions, and the presence of impervious overlying shales, only small quantities of water can be expected to penetrate the sandstones extending

above high-tide mark. Below that level any water permeating the rocks from the river is likely to be contaminated by salt and unsuitable for use in irrigation.

For these reasons boring to obtain underground water of a quality and quantity fit for irrigation purposes is not recommended.

K. I. Gleeson's Property, Montumana

An examination of this property was carried out on 11th July, 1958, at the request of the owner. This followed the sinking of three shallow bores (Bore No. 104) in close proximity to the farmhouse, through soil, clay and basalt to depths of 14 feet, 22 feet and 20 feet respectively, without encountering water (Location—Air photo Burnie, Run 1 No. 35015).

It was stated that the sites for these holes had been selected by a water diviner.

An old, partly-filled well, located close to one of the bores, is reported to have been 70 feet deep, but contained no permanent water supply.

This dairy farm is at present served by water pumped from a stream outside the property, but as other farmers use the same source the supply is insufficient in dry seasons.

The basement rocks of the area consist of Precambrian quartzites and these are overlain in the higher parts by Tertiary basalt varying from 30 feet to 50 feet in thickness.

The property is situated on an isolated hill with slopes to valleys on all sides. A very small catchment area exists for the accumulation of underground water, and rain soaking into the soil and weathered basalt is quickly drained away along the hill slopes.

As neither the basalt nor the underlying quartzites are regarded as suitable aquifers, the possibility of obtaining a permanent supply of underground water is remote and any further boring for that purpose is unwarranted.

The owner has been told of the above conclusions and at the same time advised to develop catchment dams to conserve surface water and any available springs.

Property of A. P. Maxwell, "La Belle Alliance", Cambridge

The owner of the above grazing property has requested advice on the possibility of obtaining supplies of underground water for stock purposes by boring on his area of approximately 400 acres in extent.

This is situated immediately east of Cambridge township, on either side of the Tasman Highway and adjoining the junction with the road to Seven Mile Beach.

The central portion of the property is covered by a Tertiary basalt flow of about 50 feet in thickness. Ross sandstones and shales of Triassic age underlie the basalt and are exposed in places round the periphery of the basalt plateau. West of the plateau, on the lower slopes of Mt. Rumney, the sandstones and shales are in contact with Jurassic dolerite.

The sandstones, where they occur on the low-lying areas to the north and south of the plateau, are suitable aquifers and should yield supplies of underground water from bore holes.

Neither the basalt nor the dolerite are likely to yield water by boring.

In the absence of the owner during the examination of the property, the above conclusions were explained and the most suitable areas for bore holes indicated to his assistant, Mr. Gould.

D. W. Pryde's Property, Orford

The owner of this property desires to obtain underground water to augment the reticulated town supply in the irrigation of a commercial flower garden, which is now in the process of development.

The area is situated in the southern part of the town of Orford on the left bank of a small creek.

Recent sands and stream gravels are spread over an extensive flat adjoining the creek bed. A section of the gravels in this locality shows them extending below 10 feet from the surface, and the full thickness may extend to 15 feet or more.

In dry months the stream and surface water pass through the gravels to Prosser Bay in the near vicinity.

Triassic sandstones occur at surface about five chains to the west of the property and are expected to underlie the alluvial gravels.

The possibility of obtaining a water supply of suitable quality from a bore in the gravels is favourable. If this is obtained at shallow depth as is anticipated, it is recommended that the bore be deepened below water level to act as a sump to accumulate the supply for pumping.

In the event of insufficient water being obtained in the gravels the hole should be extended into the underlying sandstone, where further supplies can be expected.

W. A. Perkins' Property at Oyster Cove

This property of nearly 100 acres is situated at Simmonds Point on the north-eastern shore of Oyster Bay in the D'Entrecasteaux Channel district.

The owner desires to obtain supplies of ground water for stock watering, household purposes and pasture irrigation.

The rocks covering the area are well exposed in cliff faces along the shore and consist of Ross Sandstone of the Triassic System.

About 10 chains outside the northern boundary of the property the sandstones are intruded by Jurassic dolerite.

Elsewhere these sandstones have proved to be a suitable aquifer for obtaining supplies of ground water and the possibilities of recovering adequate quantities by boring at Simmonds Point are favourable.

The quality of the water in the sandstones is usually suitable for stock and some household uses, but may contain salts in too great a proportion for irrigation purposes.