DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No. 19/127

REPORT ON UNDERGROUND WATER PROSPECTS

Section 39,Hd. Macclesfield

- L.E. Willcox -

Advice is desired on the prospect of obtaining an increased supply of water from underground sources by boring or well-sinking to be used for irrigation purposes. Sufficient water for stock is at present obtained from two shallow wells which have been sunk on the southern bank of a creek which crosses the northern portion of the property.

The rocks underlying the area under review consist of hard dense quartz - mica - schist with interbedded fine-grained mica, and siliceous schists. These rocks are not usually regarded as a favourable aquifer, or water-bearing formation for on decomposing they form a clay which is carried down into any cracks or joints in the rocks by percolating ground water and seal them up. Exceptions occur where these rocks have been considerably shattered and crushed by geological faulting, the ground water in such instances being stored in the shatter-zone. No actual fault was noted within the boundaries of the property under review although the presence of fracture zones is suspected, as evidence by the wide range of the strike and dips of the formations where outcrops occur.

It is suggested that the west to east creek crossing the northern part of the property has cut its channel along a fracture-zone. It is recommended, therefore, that the following suggestions are tried:-

1. Upper (upstream) well.
   (a) Remove the willow tree growing on the side of the well.
   (b) Clean out the well. If the bottom is not on bedrock (schists), then,

(c) Deepen well into the upper weathered zone of the bedrock and cut a drive at the bottom of the well in the direction of the creek.

2. Drill a trial borehole "A" at the site selected, between the upper well and the western boundary fence. The actual site is marked by a small stone cairn.

The maximum depth to which drilling should proceed will depend upon the results of the first 60 - 70 ft. of drilling. If no supply (above 200 - 300 gals. an hour) has been cut by 70 ft. then the site should be abandoned. However, the maximum depth (for estimating the cost of the borehold) should not exceed about 130ft.

It is suggested that the borehole be tried first, before commencing the actual deepening and driving of the upper well as recommended above 1.(c).

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13/5/43.