

DEPARTMENT OF MINES.

SOUTH AUSTRALIA.

INSPECTION OF MR. R.S.J. OATES' PROPERTY, SECT. 30.

HD. COHEN, RE BORING FOR WATER.

An inspection of Mr. Oates' property was carried out on the 12th September, 1949 to determine the underground water prospects. The block is approximately 10 miles north-west of Penong township.

GENERAL GEOLOGY AND TOPOGRAPHY.

The property is slightly undulating due to a mantle of Pleistocene dune-sand formation, capped with travertine limestone, limestone rubble and a marl soil. It is situated near the northern limit of the old coastal dune range, where individual rises and troughs are not well-defined, and surface drainage is mainly confined to broad flats between the minor undulations.

Bores and wells in this district have shown that the aeolianite formation generally overlies Older Tertiary sandstone, calcareous sandstone and clays, which rest directly on an eroded platform of Precambrian gneissic bedrock. The latter is at an undetermined depth on Mr. Oates' block, but in view of results throughout the district generally, it can be expected to be met with about the 100ft. mark. The nearest wells (or bores) which have penetrated the bedrock are:

- (a) Salt well on Sec. 14, Hd. Giles, 4 miles at 20°N of W. from N.W. corner of block, bedrock at approximately 100 ft.
- (b) Dry well on Section 21, Hd. Cohen, 4 miles at 35° S of E from S.E. corner of block - bedrock at approximately 30 ft.

Just beyond the northern limit of the block, the mantle of aeolianite ceases, and the country is flat and featureless, with a thick but impoverished mallee and tea-tree herbage. A salt well sunk in this belt by Mr. A.O. Neilson, Sec. 15, Hd. Cohen, penetrated 102 ft. of sediments which included richly fossiliferous Pliocene sandy limestone. Limestone of this age has not been previously recorded from the district, but with the discovery of a similar formation further westward near Euria Rock-hole, it appears that an arm of the Later Tertiary sea which covered the Nullarbor Plains area extended easterly to north of Penong.

PREVIOUS ATTEMPTS.

Three bores and one well have already been tried on this property, all of which penetrated extremely saline water at depths between 60-70 feet. Bedrock has not been reached on any of these occasions. Mr. A.O. Neilson's well on Sec. 15, Hd. Cohen, indicates the saline character of the underground water in the featureless country beyond the northern boundary of the property. A good productive well at Cundilippy, Sec. 9, Hd. Cohen, 2 miles south of Mr. Oates' block is situated in a major depression. It is a shallow perched supply, but no similar sites are reproduced on the latter block.

PROSPECTS AND SITES SELECTED:

Previous bores have been located on the sides of low rises, but due to the absence of major depressions surface drainage cannot be employed to maximum advantage, and the area can be considered adequately tested. Prospects of obtaining satisfactory stock waters

for additional bores are considered extremely slight. Two bore sites were selected (numbered in order of preference on plan attached) located to take advantage of the most favourable drainage conditions offering. Both are in the Southern cleared portion of the block, which exhibits a little more relief in topography than the northern part. These, however, are not considered sufficiently encouraging to justify boring.

RECOMMENDATIONS:

It is recommended that no boring be undertaken on Sec. 30, but efforts be concentrated on attempting to establish surface catchments, although the lack of impermeable material may require the use of cement in the construction of dams. The best sites for dams are numbered in order of preference on the accompanying plan.

DK:AR  
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