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DEPARTMENT OF MINES.

SOUTH AUSTRALIA.

REPORT ON GROUNDWATER PROSPECTS.

SECTION 463, HD. JULIA CREEK.

M.T. & D.P. CARTER.

The Property was inspected on 2nd June, 1954.

REQUIREMENTS:

Water is required for domestic-garden and stock purposes.

LOCATION, TOPOGRAPHY:

The section is situated in the northermost portion of the Hd. Julia Creek and extends across the hundred boundary into Hd. English. The hundred boundary follows a local drainage divide, which traverses the section in a general south-west to north-east direction. The southern portion of the section is drained by the headwaters of Julia Creek, thus providing a very limited catchment with regard to replenishment of supplies of underground water. However, the catchment is ample for utilization of run-off by means of dams. The rainfall is approximately 19 inches per annum.

GEOLOGY, HYDROLOGY:

The rocks underlying the area comprise Sturtian slates with some minor developments of sandstone occurring as thin lenticular beds within the slates. The whole series dips eastward at relatively low angles, the steepest recorded inclination being 45°. The slates themselves have also a well-developed but rather tight cleavage intersecting the bedding planes at a high angle, in spite of which they appear to form a rather dense rock mass in which water movement would probably be severely

restricted. They cannot be regarded as rocks likely to yield anything more than limited stock supplies when drilled. Moreover, water occurring in slates of this type is often too saline for garden purposes.

A sandstone bar outcrops west of the house, but could not be traced for any distance along the strike, and was not observed to outcrop in the creek to the north. These sandstones are in general very lenticular, and it is quite possible that in this particular case the bar does not extend as far as the creek, where intake would be better than elsewhere. The rock is a very impure type, the permeability of which is thought to be low, but it is possible that if a bore did penetrate it at a depth of 150 feet or so in the vicinity of the creek there might be a better chance of obtaining stock water than by drilling elsewhere.

A site has therefore been indicated on the attached plan, where limited supplies of probably stock quality water may be obtainable, but it is emphasized that its selection has been influenced by the possibility of penetrating a sandstone bar, the existence of which at the site has not been definitely established.

CONCLUSIONS & RECOMMENDATIONS:

The chances of obtaining anything more than a limited stock supply of water suitable only for stock purposes are not considered good, and drilling at the chosen site must therefore be regarded as speculative. Since the water is needed partly for domestic garden purposes, drilling can not be recommended. If undertaken at the site indicated, a depth of 150' to 200' would probably be necessary, and costs including casing are estimated at £400 - £500.

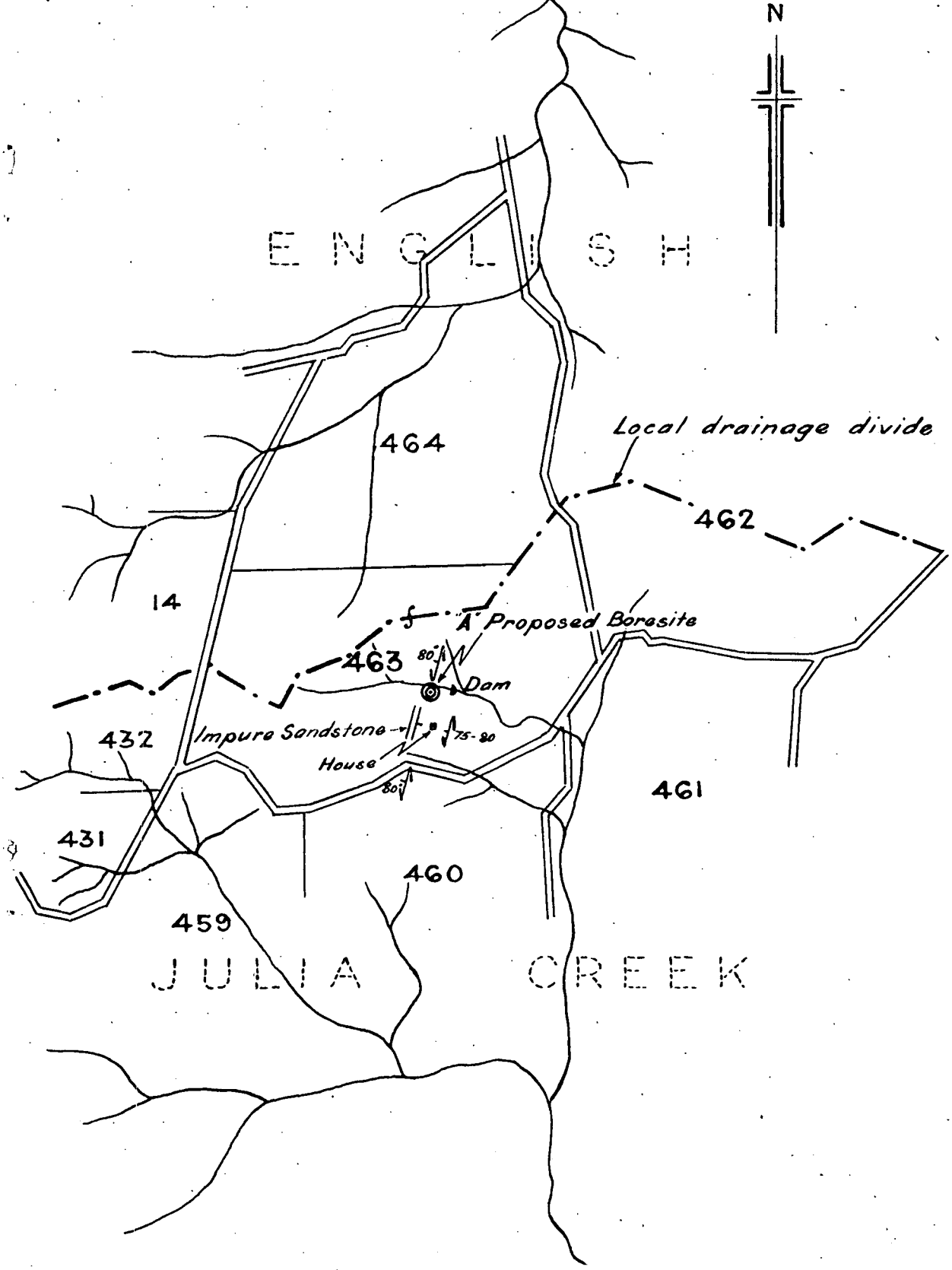
It seems likely that collection and storage of surface runoff in a dam or dams might be a better means of ensuring the required supply, and it is recommended that consideration be given to this, rather than to the drilling of a bore. It is suggested that before constructing a dam, at least five auger holes be put down to test the depth and extent of the clay.

The holes should be about a foot deeper than the proposed depth of the dam, four being placed at the corners and one in the centre of the site.

J. J. Jenkin.

(J. J. JENKIN)
ASSISTANT GEOLOGIST.

JJJ:AGK
4/8/54.



To accompany report by J.J.Jenkin.

S.A. DEPARTMENT OF MINES					
Approved	Passed	Drn.	UNDERGROUND WATER SURVEY Hd JULIA CREEK Sec. 463 M.T. & D.P. CARTER	D.M.	Scale 20 Chs. to 1 in.
		Tcd. K.R.		Req.	S 925 Gkl
		Ckd.			
Director		Exd.			Date 15·6·54