

UR1975-38

Groundwater prospects near Cressy House.

W.L. Matthews

The Longford Golf Club is negotiating to buy about 44 ha of land [EP 085885] between Longford and Cressy and requested advice on groundwater prospects of the area. The area is largely located within the area shown on Figure 1.

GEOLOGY

The area forms part of the broad generally flat area which occurs around Longford. It is underlain by sediments consisting of clay, sandy clay, sand and minor fine gravel to a depth of at least 150 m. Lignite-rich zones occur throughout the section.

HYDROLOGY

Test bores to examine water prospects have been drilled in the area by the Department of Mines and a prospecting company drilled a number of holes for which geological information is available. The position of these holes is shown on Figure 1.

The water bore drilled on Richmond Hill proved a very successful bore. It was pumped at about 260 l/min for 4½ hours with a drawdown from a standing water level of 3 m to 22 m. Sand beds supplying the water were located at from 64-75 m and 106-120 m. The upper aquifer has clay beds within it and only supplies a small portion of the water.

A test bore sunk at Home Vale struck a grit bed within the range of depths of 52-62.5 m from the surface. No significant aquifers occur below this to a depth of 150 m. The grit aquifer is artesian and flowed at 9 l/min. The bore was pumped at about 115 l/min and had a drawdown to 59 m. Further north at Brickendon a test bore 150 m deep only yielded water at a rate of about 1.5 l/min.

It is apparent that moving north from Richmond Hill, the quantities of water present decrease as first the lower aquifer appears to lens out at Home Vale and both the upper and lower aquifers are absent at Brickendon.

A series of holes drilled to the west by the prospecting company also suggest a thinning of sand beds to the north. However a bed of sand about 25 m thick is indicated in Hole 3 at 91-116 m from the surface. In addition the upper aquifer is present to some extent in most holes and a grit to fine gravel band persists in all holes and probably forms part of the upper aquifer. No information of water potential has been obtained from these prospecting holes.

WATER QUALITY

Analyses of water taken from the bores at Richmond Hill and Brickendon are given in Table 1. A sample was not collected from the Home Vale bore.

The quality of the water from the Richmond Hill bore is probably unsuitable for irrigation except perhaps in well drained soils. Water from the Brickendon bore is better quality and would be suitable for irrigation. In areas between these two points it might be expected that bore water would be intermediate in quality.

Table 1. ANALYSES OF BORE WATER FROM RICHMOND HILL AND BRICKENDON.

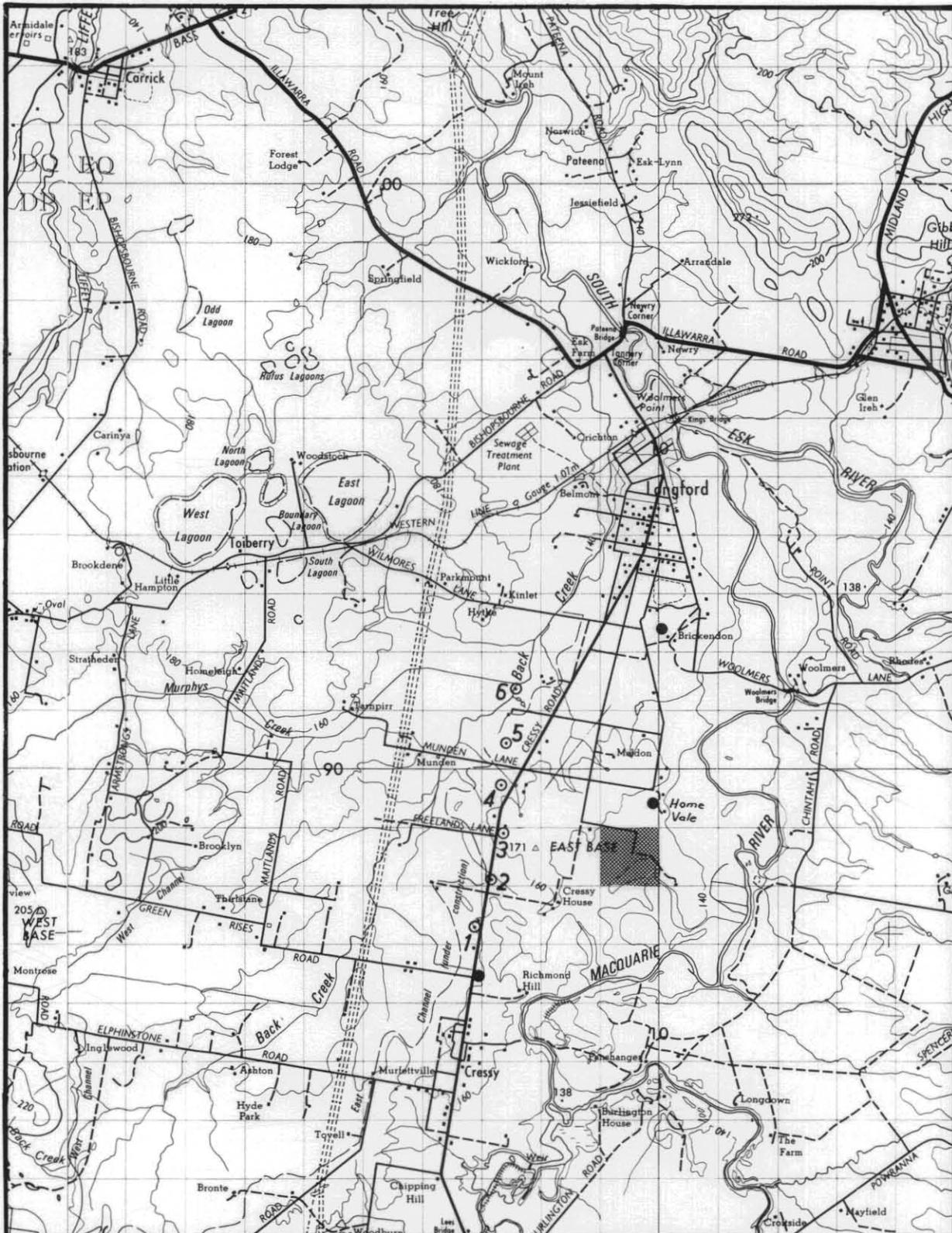
Item tested	Richmond Hill ppm	Brickendon ppm
pH	8.0	6.8
CO <sub>3</sub>	nil	2.06
HCO <sub>3</sub>	14	211
Cl	665	28
SO <sub>4</sub>	20	-
F	0.8	-
SiO <sub>2</sub>	17.0	8
Ca	76	13
Mg	84	15
Fe	-	Tr.
Al	-	
K	22	14
Na	210	175
Total Dissolved Solids	1665	574
Total ions	1110	670
Hardness	536	94
Permanent		-
Temporary		94
Alkalinity	12.5	169

## CONCLUSIONS

The prospects of obtaining groundwater in the Cressy House area are good. The upper aquifer would probably be struck between about 55 m and 80 m from the surface; it would probably contain gravelly horizons and yield water at a rate of about 100 l/min. The lower aquifer may persist this far north and if it does, it could be expected in the range of 90-120 m from the surface. It would probably be thinner than at Richmond Hill, but if it was of similar thickness, then large quantities of water could be expected.

The quality of the groundwater may not be suitable for irrigation except on well drained soils.

[9 May 1975]



**GROUNDWATER PROSPECTS NEAR CRESSY HOUSE**

- Area under option to purchase
- Groundwater test hole
- 1○ Mineral prospecting hole

W. L. MATTHEWS May 1975

0 1 2 4 Km

DEPT OF MINES-TAS.

3982-47

5 cm