

copy/

1162 TRANS

18th October, 1950

MEMORANDUMPossibilities of Underground Water  
in Kentish Municipality

Some eighteen months ago, several farmers in the Sheffield district were interested in obtaining supplies of underground water by means of a departmental drill. However, after discussion with these men, their interest appears to have waned and this for two reasons -

1. During the intervening period many of them have devised other methods of obtaining water supplies, such as from wells, pumping from springs etc.
2. It was necessary to point out to them that the nature of the rock to be drilled was such that the operation would not only be expensive but also uncertain of definite results.

The drilling programme of the Department to date has been carried out in country where it has been comparatively easy to predict with some degree of certainty the occurrence of reservoirs of underground water. That is, that wherever sandstone basins occur there is a more than reasonable chance of obtaining supplies of underground water and wherever dolerite has intruded there is no chance at all. In the Sheffield District, however, the rock type, as far as the farms are concerned, is basalt, which has flowed as a lava sheet over the then existing sediments. Some of these rocks were clay and sand beds in river valleys and some were rocks of the "porphyroid" series, which are not good aquifers. The thickness of the basalt varies greatly over the area and is dependent on the topography of the surface over which it flowed. Moreover it is likely that there is more than one flow of basalt with Tertiary beds in between. However, the point I wish to make is that to search for supplies of underground water it would

- 2 -

be necessary to bore through the basalt, a hard compact rock, for an unknown depth and even then it would not be certain that water bearing strata would be encountered.

A certain amount of surface water is available for the greater part of the year and can be collected in shallow wells. Springs occur in various localities and some do flow all the year. However, most of this is not true underground water but water that collects either on top of or in joints of the basalt.

R. Bramach, Paradise:

Mr Bramach's farm lies to the East of the Paradise old School and Church. It is mostly covered by basalt but to the East outcrops of the so-called porphyroid series may be seen. This suggests that the basalt sheet is thin at this point but that it overlies the non-aquifers, that is the "porphyroids" rather than Tertiary sand beds. A well, that is dry for some months of the year, has been sunk near his house, but another well near a small cottage has some water all the year round. This Mr Bramach proposes to pump to an elevated position, for use on his farm. This is not true underground water but seepage from a small hill and no great supplies could be expected.

A. Murfet, Paradise:

This property lies to the West of that of Mr Bramach and is wholly occupied by basalt. Mr Murfet, since his application has sunk a shallow well from which he hopes to obtain adequate supplies.

Morse Brothers, Paradise:

Have a property adjoining to the West and North of Mr Murfet. Basalt covers the whole area and appears to have a thickness of at least two hundred feet before a series of springs at a general contour level indicates a water carrying bed. On the property, is a strong perennial spring which would satisfy the farm's requirements if pumped to a higher level. This Mr Morse proposes to do.

S. E. Overton, Paradise:

Mr Overton has sold his farm and is no longer interested in water possibilities.

J. W. O'Brien, West Kentish:

Mr O'Brien's property is situated to the West of Carey's Road, just beyond the rail crossing. Basalt soil and boulders cover the land but at no great distance are outcrops of the

- 3 -

of the "porphyroid" series. This again suggests that the basalt although of no great thickness, rests on these rocks. Through the farm flows one of the headwater streams of the Don and he proposed to install a hydraulic ram on this to provide his water needs.

B. H. Duff, West Kentish:

This was at the time of application, the property of R. M. Byard and is situated to the East of the West Kentish Siding. Two shallow wells have been sunk to and in basalt but little water is obtained. Mr Duff is interested in having a bore carry on from one of these wells but is undecided because of the expense involved.

Allan C. Duff, Sheffield:

This property is situated some two miles North-west of Sheffield on an elevated basalt plateau. A well has been sunk, 30 feet, still in soil and is quite dry. Round the base of the hill, 150 feet below the point where Mr Duff requires water supply, are a series of springs and seepages. It would, therefore, appear that a bore or well would have to be sunk at least 150 feet before a water-bearing stratum would be encountered. Mr Duff, although anxious to obtain water, is rather doubtful on the score of cost.

Kentish Council:

Mr A. Dyer, the Council Clerk has suggested that the Council may be interested in having one or two bores put down in the town area to augment the local water supply. Here, there is better reason to be hopeful of encountering an aquifer at no great depth as P.B. Nye reports that wells sunk to 60 or 70 ft in the town area have encountered beds of sands and gravels. Bore sites should be chosen where basalt outcrops to the surface, as it does in places, in order to avoid casing the holes.

Conclusions:

The rock type occurring on all the properties of those interested in obtaining supplies of underground water is Tertiary Basalt. This rock is not itself an aquifer though some water may be obtained in weathered portions and joints. Water bearing strata may be encountered in some places below the basalt but there can be no guarantee that this would be so. The basalt itself where fresh is a hard compact rock and thus drilling, as well as being rather uncertain of productive results, would also be expensive.

Terence D. Hughes (sgd)  
GEOLOGIST

The Director of Mines,  
Hobart.