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1977/16. Groundwater prospects near Reedy Marsh Road, Deloraine.

W.L. Matthews

Mrs J.K. Burdock requested advice on groundwater occurrences on a 26 ha property near the Reedy Marsh Road 4.5 km north of Deloraine. The water is required for tourist wildlife park amenities and an area for waterfowl.

RELIEF AND GEOLOGY

The property is situated in undulating country. Most of the land is slightly elevated but there are valleys extending to the north-west and south-east near the north-eastern boundary [DQ729074].

Jurassic dolerite occurs on much of the property and surrounding land. This has been covered by windblown sand to varying depths on the north-west part of the property. The valley in the south-east side is underlain by clay and sandy clay. There are Permian mudstone fragments at several places in this area, particularly in upturned stumps and it is probable that solid mudstone underlies this valley at depth. The dolerite is fine-grained around the margins of the valley and it is likely that it is sill-like over much of the property although outcrops across the valley on the south-east corner suggests that there may be a dyke in this area.

GROUNDWATER CONDITIONS

A well dug to the south-west of the house is 4.6 m deep and the water level is 3.7 m below the surface. A sample of water from the well was tested with a salinity meter and this indicated less than 200 ppm of dissolved solids. The well is sited in a shallow valley and was dug in an area where the dolerite could be expected to be weathered. It is not known how much the well delivers but it is probably not a great quantity because of the small drawdown that is possible.

Few water bores have been drilled in dolerite in Tasmania and the water quality and yields obtained have been variable. The landsurface has a fairly low relief for country underlain by dolerite and from a topographic point of view the area is more favourable for groundwater occurrence than most dolerite areas.

Permian mudstone has been drilled in many areas throughout the State with considerable success in obtaining water. The yield is normally about 25 *l*/min. There appears to be a fairly good chance of obtaining water in the area of Permian mudstone in the south-eastern part of the property. If the dolerite is sill-like in nature *i.e.* an approximately horizontal sheet of dolerite overlying the Permian rocks, there is a much lesser chance of striking dolerite at depth than if the dolerite is intruded as dykes *i.e.* fairly steeply dipping bodies. If dolerite is struck at depth in a drill hole, then the chances of obtaining water are decreased.

CONCLUSIONS

The most favourable site for a bore is in the valley underlain by clay and Permian rocks in the south-east part of the property. The siting of a bore in the dolerite areas involves more risk in not obtaining water in quantities that would warrant the installation of pumping equipment than the Permian area.

An alternative to drilling may be the installation of a catchment dam in the valley underlain by Permian sediments. However if there are waterfowl in the area, the water may be too polluted for tourist amenities.

[20 April 1977]

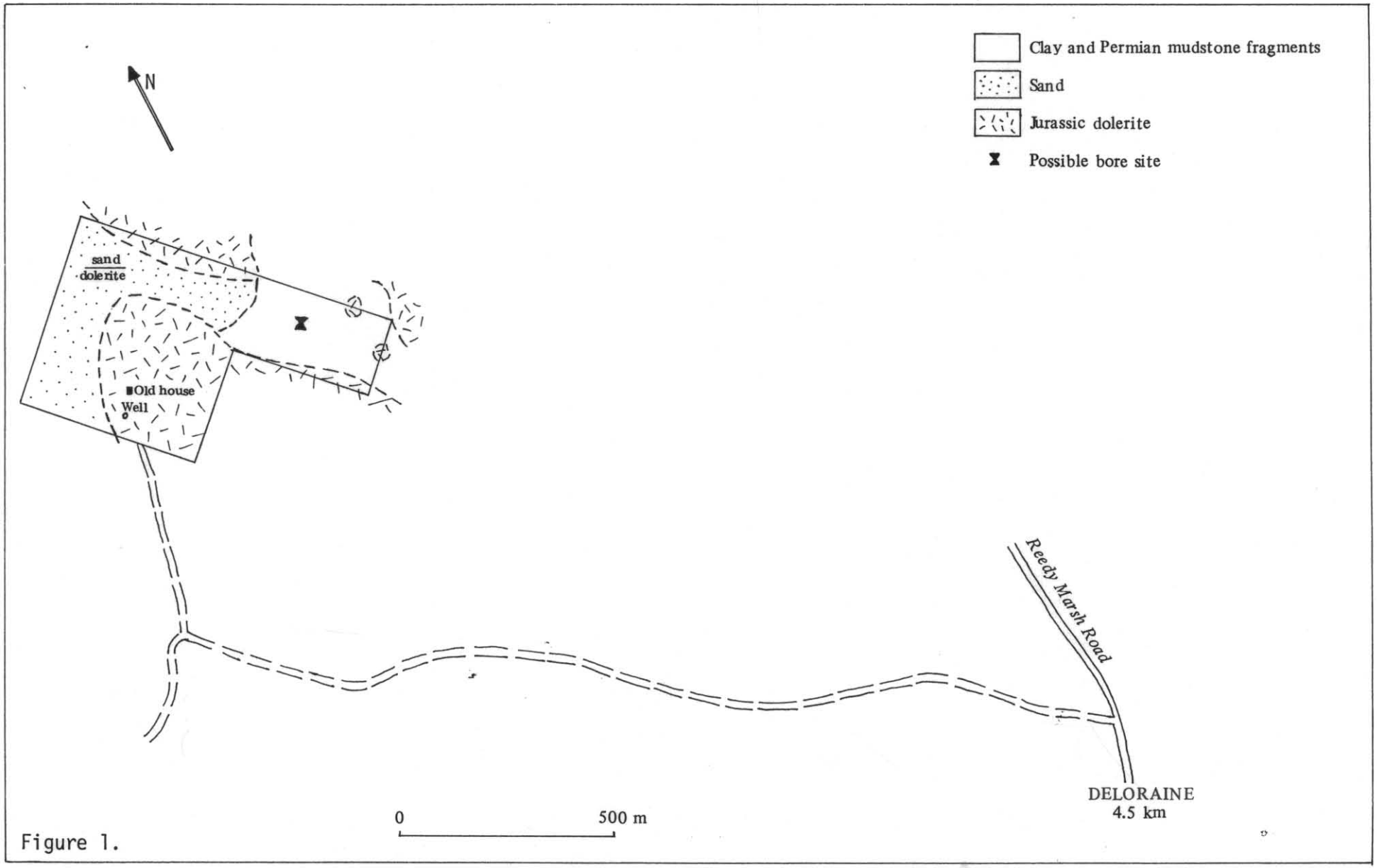
N
Clay and Permian mudstone fragments
Sand
Jurassic dolerite
Possible bore site
sand
dolerite
Old house
Well
Reedy Marsh Road
DELORAINE
4.5 km
0
500 m

Figure 1.

5 cm