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19, 20, 21. GROUNDWATER PROSPECTS ON THE PROPERTIES OF MR K. BRODRIBB

by D. E. Leaman

FRODSLEY ESTATE

The Frodsley Estate consists of a strip of land, approximately 1 mile wide, which extends across the valley of the Break O'Day River. Most of the estate lies on the terraced valley floor.

Rock types present include Permian sandstone and limestone, Triassic sandstone, Jurassic dolerite and Tertiary to Recent terrace deposits consisting of dolerite and sandstone boulders and alluvium.

Groundwater Prospects

General

It is not recommended that drilling be undertaken in the dolerite areas, for the following reasons:—

(*a*) Dolerite occurs in hilly areas or as hill cappings. This will mean deeper bores increasing the expense.

(*b*) Dolerite presents drilling difficulties and is expensive to drill.

The dolerite is, however, not devoid of water (note presence of springs, fig. 39).

Prospects are good in all sedimentary areas where it can be established that dolerite is unlikely to occur below ground level.

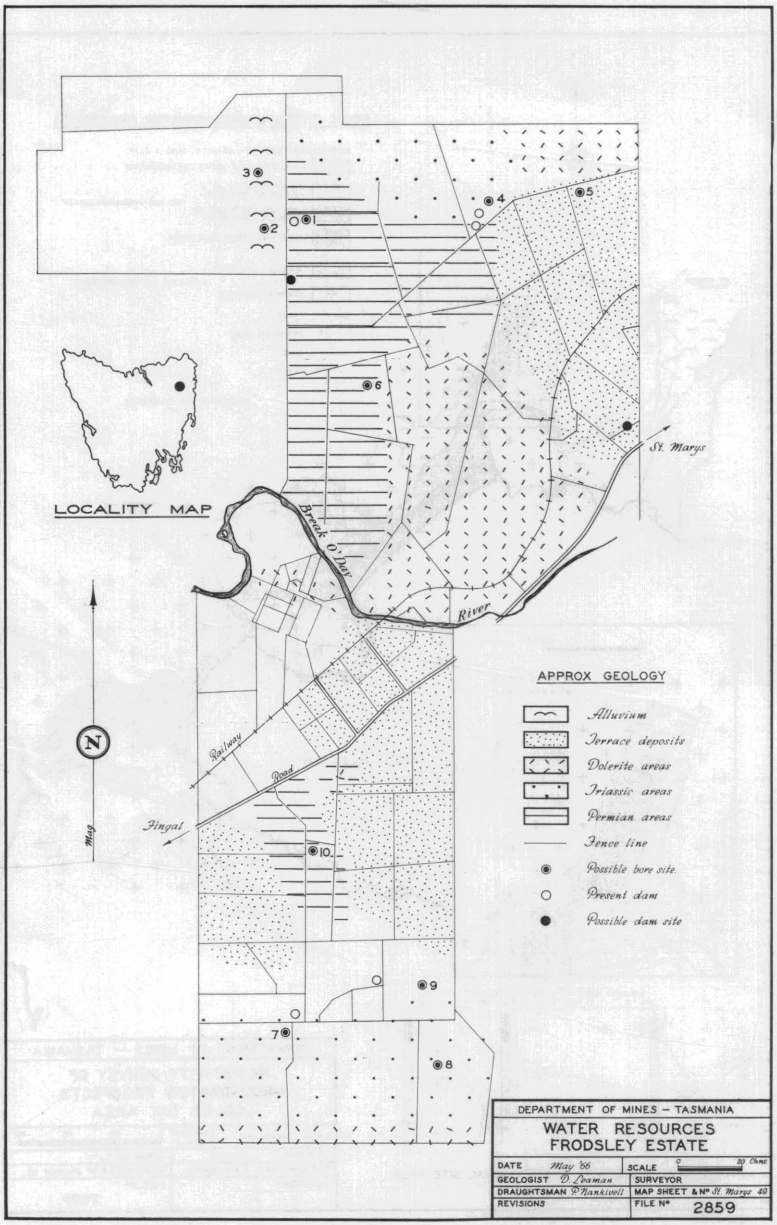

FIGURE 39

5 cm

This is thought to be the case over most of the southern half of the estate and the western side of the northern half.

(*a*) Bores in Permian and Triassic sedimentary rocks should be successful if placed in valley floors. The yield from Permian rocks in Tasmania is approximately 200-400 g.p.h.

(*b*) It is suggested that drilling should be avoided initially in the terrace areas.

The quality of any water recovered should be satisfactory for stock usage.

It is not anticipated that the water will be artesian and therefore pumps will be required for each bore drilled.

It is expected that the limestone will be more expensive to drill than the sandstone.

SOME SUGGESTED BORE SITES (see fig. 39)

Northern Half of Property

No. 1: Permian limestone, sandstone behind dam in valley, very promising site. Estimated depth to water, 5-10 feet.

Nos. 2 & 3: Alluvial flats. Prospects excellent. Water could possibly be run into a dam at the southern end of the alluvial flats. In this position a dam would also be supplied from any flow in the creek nearby. Estimated depth to water approximately 6 feet.

No. 4: Gully behind twin dams. Triassic sandstone. Absence of dolerite at depth cannot be guaranteed here. Prospects reasonable. Depth to water likely to be about 10 feet.

No. 5: Corner of paddock. Permian mudstone(?). Again absence of dolerite cannot be guaranteed. Depth to water probably 5-10 feet.

No. 6: Limestone on bench below dolerite contact, near old workings. Good site, good prospects, depth to water probably 10-15 feet.

The region S of site 1 and W of site 6 has good prospects overall. Drilling is not recommended E of site 6, nor S of sites 4 and 5. A dam is suggested on the eastern margin to capture seepage waters.

Southern Half of Property

No. 7: Gully behind dam, Triassic sandstone. Good prospects. Depth to water in gully floor probably less than 5-10 feet.

No. 8: Valley area behind low hills. Dolerite to S not thought to underlie this area, but this is not guaranteed. Prospects reasonable on this account. Depth to water approximately 5-10 feet.

No. 9: Stream valley through terraces on limestone. Good prospects. Depth to water depends on position on terrace. If this site is successful bores could be located virtually anywhere on this terrace, that is E of site 10 and N of site 9.

No. 10: Located in valley near limestone outcrops. Good prospects. Water should be very shallow.

Drilling should be avoided near the small hill capped with dolerite.

ST MARYS PROPERTY

Located in the alluvial area 1 mile W of St Marys township this property has excellent prospects throughout. Depth to water should nowhere exceed 10 feet.

Dug wells may present fewer and cheaper problems than bores in this locality. Bores would need screening.

All water here will require pumping to the surface. No estimates of possible yields can be made, but quality should be very good.

FALMOUTH

Falmouth township is built upon massively jointed St Marys Porphyrite. Drilling is not recommended in this rock, for the same reasons as listed for dolerite on the Frosdsley Estate. However, some water may be recovered behind the sand dunes that flank the property.

The site, for a dug well, is suggested directly behind the dunes in the dip area. Prospects become poorer the greater the distance upslope away from the dunes proper and toward the township.

The depth to water should be considerably less than 10 feet. No estimates as to reliability of yield or of quality of water can be made. However, it is suggested that chemical and bacterial checks be made of any water recovered as the site is downslope from the township. It is also noted that the catchment area is very small.

RECOMMENDATIONS

Bores should be taken 20-30 feet below summer water level to ensure that sufficient depth of water is present for pumping after extended dry periods.

Bores may not permit continuous pumping for many weeks.

Bores may need casing near the surface.

Bores should not be placed closer together than 100-200 yards.