RB 36/111

DEPARTMENT OF MINES

SOUTH AUSTRALIA

REPORT ON GROUNDWATER PROSPECTS

SECTION 748, HUNDRED MYPONGA - J. D. LANG

This property was inspected on 16th December 1953.

REQUIREMENTS:

Mr. Lang requires water for domestic and stock and garden use, and for the proposed watering of lucerne. The area under lucerne will depend on the water available, but is intended to be several acres, and a minimum of about 2000 gallons per hour is understood to be required for this purpose.

LOCATION, TOPOGRAPHY:

The Section extends from the crest eastwards almost to the toe of a long bedrock ridge, and is intersected by a rather sharply incised gully cutting directly across the strike of the underlying beds. The gully has a steep gradient in all but its lowest part, and drains a catchment area of possibly 100 acres. The soil is sandy and in places lateritic, and although much of the less intense rain falling on the surface would soak in, surface runoff after heavy storms is probably high. Rainfall is understood to be about 35 inches per year.

GEOLOGY, HYDROLOGY:

Two distinct series of rocks occur in the vicinity. The valley south of the ridge on which Section 748 lies is underlain by fluvio-glacial clays and sands which attain a known depth of at least 600 feet in places, and are highly charged with good quality water. These rocks do not occur under the section in question, which is underlain by a succession of siliceous slates, siltstones and slaty schists with several quartzite bands, dipping in an easterly direction at fairly high angles. Local folding and crumpling on a small scale is evident in one of the minor quartzite bands, and the rocks appear to be fairly well jointed.

In view of the rather high rainfall, the general attitude of the beds, and the existence of a well developed joint system in the quartzite, it is considered that there is a reasonable possibility of obtaining a supply of up to 2000 gallons per hour from a bore at the site indicated on the attached plan. This has been located so that it should penetrate a quartzite band at fairly shallow depth, and would probably still be in the same rock at a depth of 200-250 feet. The quartzite outcropping nearby is fairly dense and silicified, but on the southern gully flank it is in places a coarse friable felspathic sandstone, and it is expected to carry a fair amount of water in the joints and cracks.

The bore site selected is adjacent to the creek, and recharge should be a maximum. The anticipated depth is 150 - 200 feet. Drilling will probably be fairly hard, and the cost of the bore might be £500 - £600. The quality of the water should be satisfactory for the purposes required. A bore into similar strata on Mr. Kuchel's property nearby obtained water of 62 grains quality.

There is an alternative possibility, if the cost of constructing a bore is not at present considered warranted. The gully intersecting the Section had developed a small flat just below the house, apparently the result of siltation on the upstream side of a quartzite bar. The depth of the alluvial fill is probably not more than 10 feet or so, but is expected to represent quite a sufficient storage for a domestic and garden supply. It cannot be regarded as a potential source of water for irrigating lucerne, because of the limited extent of the flat. However, it is considered that a shallow well, taken if possible to the full depth of the alluvium, would be warranted for domestic garden purposes, if the bore be not proceeded with.

CONCLUSION & RECOMMENDATIONS:

There is a reasonable prospect of obtaining a supply of the order of 2000 gallons per hour by drilling into the

quartzite at the site indicated on the plan, and which has been pointed out to Dr. Lang on the ground. Such a bore would probably be 150 - 200 feet deep, and might cost as much as £300.

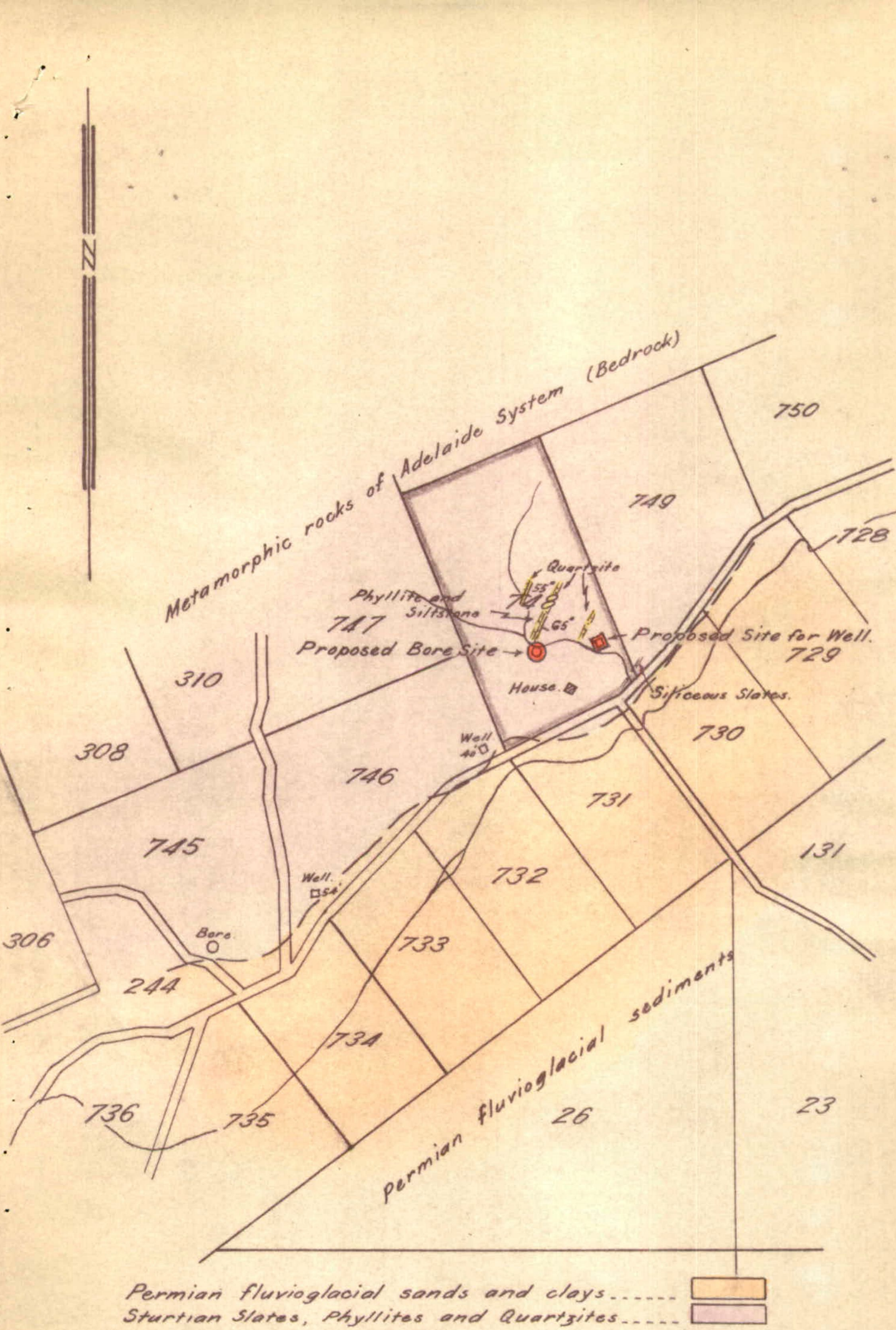
As a cheaper alternative, in order to obtain a domestic garden supply, a shallow well adjacent to the course of the gully, at the site shown on the plan, should be successful and could be constructed with very little expence.

The quality of the groundwater should be satisfactory for watering of plants.

W.O'Driscoll

SENIOR GEOLOGIST.
HYDROLOGY

RPO'D:EK
23/12/53



Permian fluvioglacial sands and clays.....

Sturtian Slates, Phyllites and Quartzites.....

To accompany report by E. O'Driscoll. Senior Geologist.

S.A. DEPARTMENT OF MINES

Approved	Passed	Drn.	UNDERGROUND WATER SURVEY	D.M.	Scale 200 chns. to 1 inch.
		Tcd. P.J.B.	Hd MYPONGA SEC. 748	Reg.	S 853 Hc4
	B.S.G. per A.R. C.D.	Ckd.	J. D. LANG		
Director		Exd.			Date 4-1-'54