D.M. 1938/53

RB 36/80

DEPARTMENT OF MINES
SOUTH AUSTRALIA

REPORT ON GROUNDWATER PROSPECTS, SEC 157, HD. MYPONGA - P.R.DAVIES

This property was inspected on 28.10.53.

Requirements.

Mr. Davies is running dairy cattle, and needs an assured supply for domestic, garden and dairy purposes. Good quality water is therefore necessary, but a supply of 1000 gallons per day, and possib. less, would meet requirements.

Locality, Topography etc.

The section is some two miles south of the fault scarp bordering the southern margin of the Willunga Basin and lies in a drainage depression paralleling the main bedrock ridge exposed in the scarp. The country is gently undulating to hilly, and the very sandy soil is well covered with either pastures, bracken, or native timber.

The drainage depression has an extensive catchment upstream of the section, and considerable quantities of water must move down the valley either in the form of surface flow or underflow in the small watercourses, in which water was lying in places on the date of inspection. Two of them meet on the section.

Rainfall is understood to be of the order of 30 inches per annum, fairly well distributed.

Geology, Hydrology.

The high ridge within a mile of the northern boundary shows exposures of bedrock, in the form of steeply dipping quartzites, slates and tillites of Sturtian Age.

South of these, and underlying the whole of that part of the valley on which Section 157 is situated occurs glacial material of unknown but usually fairly considerable thickness. It is known to comprise clays, sandy clays and sands, the latter being generally loosely consolidated and charged with water. On the adjoining property to the eastward there is a record of a bore 270 feet deep yielding potable water. Drilling is often taken to a depth such as this, as difficulty frequently is met with in handling the loose "blowing" sands, although water generally occurs at a depth of 100 feet or so, in stock supply.

There are two existing fairly shallow wells on the property, located along the central drainage line. One of these is equipped with a well and tanks, and is understood to have been in use for many years. Its depth is 29 feet, static water level at time of inspection being 4 feet. A sample of the water has been collected for analysis. (Hardness 6 grains p.g.) It appears potable, and has been used successfully for growing garden vegetables on the sandy soil near the well. Natural surface level is approx. 25 feet below the house.

The opinion was formed that this well would be capable of yielding a permanent supply of water sufficient for Mr. Davies present requirements, but it would be advisable to conduct a pump test to check this.

Such a test should be of at least six hours continuous duration, the pumping rate being restricted to 200-300 gallons per hour, or less if the well shows signs of rapid exhaustion. If the drawdown level stabilizes itself before the end of the test, it could reasonably be assumed that the supply is permanent.

No information is available regarding the second well, but it appears also to be satisfactorily sited, and would probably yield a permanent stock supply of good water if needed.

Conclusions and Recommendations.

A bore into the water-charged glacial sands and clays underlying the property could reasonably be anticipated to provide stock supplies of good quality water, at depths between 100 and 300 feet. Full casing and slotting would be needed, and as difficulty often occurs in handling the loose sands, the cost might be as much as £2 per foot, including casing.

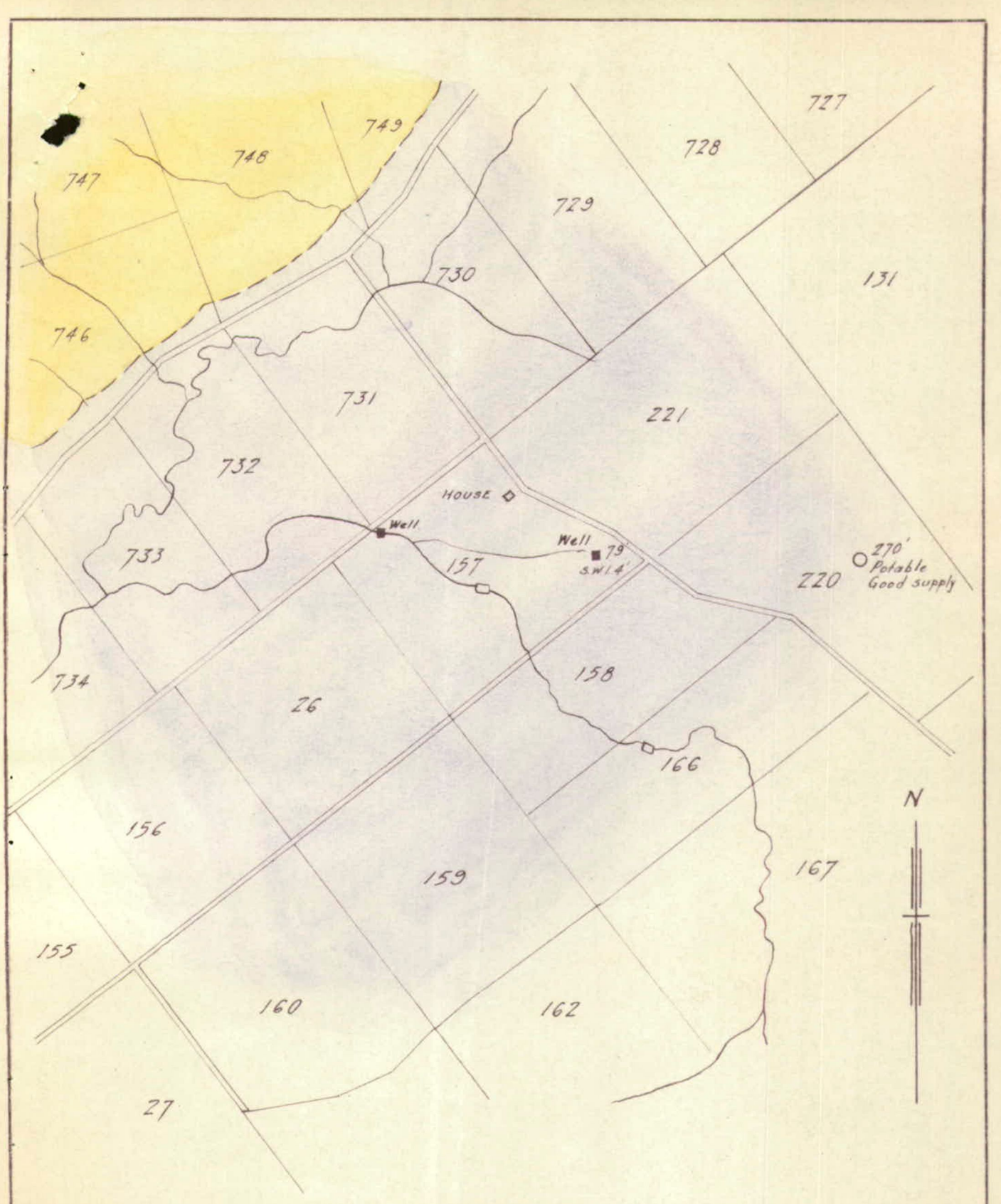
It is considered that adequate supplies should be available from the two existing wells, and the expense of drilling is not warranted unless this expectation proves unfounded.

Mr. Davies should test pump the well already equipped, to determine its capacity. If this is satisfactory the matter of purchase of equipment could be referred to a reputable firm specialising in such matters.

L.M. O'Driscoll 30/10/53

SENIOR GEOLOGIST
HYDROLOGY

EPO'D:JLB.
30:10:53.



SCALE

Chains 20 10 0 ½ 1 Mile

Glacial - - - - - - - - - - Bedrock - - - - - - - - -

To accompany report by E. O'Driscoll.

S. A. DEPT. OF MINES

Approved	Passed	Drn. M.B.L. Tcd. Chd. R.R.	UNDERGROUND WATER SURVEY Sec 157 Hd. of Myponga (P. Davies)	D.M. Rec.	Scale 20 ch. to 1 in. S 844 Hc 4 20.10.53