REPT.BK.NO. 74/79

GROUNDWATER SURVEY

Hundred Talunga, Pt. Section 6024

- S.A. STEAD -

S.R. BARNETT

Department of Mines
South Australia —

DEPARTMENT OF MINES
SOUTH AUSTRALIA

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by

S.R. BARNETT
GEOLOGIST
HYDROGEOLOGY SECTION

Rept.Bk.No. 74/79
G.S. No. 5398
Hyd. No. 2641
D.M. No. 273/74

21st March, 1974.

DEPARTMENT OF MINES
SOUTH AUSTRALIA

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GROUNDWATER SURVEY

Location

General: 4 km northeast of Gumeracha

Region: 4

County: Adelaide

Hundred: Talunga

Pt. Section: 6024

Owner: S.A. Stead

Postal Address: Oakridge Road,
ABERFOYLE PARK. 5159.

Telephone: 270-2360 (work)

Requirements

Water required for: Drinking, domestic use and irrigation

Quantity: Not specified

Quality: As good as possible

Other factors: Owner prefers location as near as possible to existing power supply.

HYDROGEOLOGICAL REPORT

Physiography and Land Use

The property inspected lies on gently undulating hillslopes of low relief about 380 metres above sea level. The property is completely cleared and is covered with pasture.

Climate

Nearest rainfall station: Gumeracha

Mean annual rainfall: 820 mm (32.23 ins.)

Remarks on rainfall pattern: Most of the annual rainfall (80%) falls between April and October with each of the winter months receiving approximately 120 mm (4.4 ins.) and the summer months each receiving approximately 28 mm (1.1 ins.).

Surface Hydrology

There are no creeks, springs or surface storages on the property.

Geology

Soil Cover: A cover of grey-brown silty soil is complete over all of the property with no outcrop visible, except for some cobbles of bedrock.

Rock Units: Proterozoic-Torrensian Woolshed Flat Shale.

Lithology: Woolshed Flat Shale - metamorphozed to a fine to medium grained quartz-mica schist, with interbedded quartz reefs and minor amphibolites, as indicated by float material.

Direction and Amount of dip: About 50° to the east.

Aquifer Assessment

Type: Free water table. Groundwater is stored in joints and fractures in the underlying bedrock and therefore the storage capacity is dependent on the degree of fracturing. Within the area, bores commonly overflow

indicating that the joint systems are saturated and the groundwater is under some pressure.

Potential Recharge: Recharge results from infiltration of rainfall and downward percolation of runoff in drainage lines. Because of the high rainfall and low salinities recorded in the area, recharge is expected to be good.

Borehole Site Location

General: A borehole site is recommended as shown on the accompanying plan.

Reason for location: This location offers minimal depth to the water table and also obtains recharge from two intersecting gullies. In addition it should not interfere with bores on adjoining properties.

Proposed Depth: No more than 60 m.

Expected Yield: 4.0-7.5 litres/sec. (3-6,000 gals/hr.).

Expected Quality: About 750 mg/l.

Probable Log: 0-2 m Alluvium and weathered bedrock.
2 m + Fresh bedrock.

Drilling and Testing Recommendations

Drilling Hazards: The bore should be cased to the top of unweathered rock to prevent collapse of the bore, with 0.5 metres of casing above ground level to prevent influx of sediment into the bore.

Sampling: All waters cut and at intervals in the aquifer to detect any salinity increase with depth. Samples (26 fl. oz.) should be brought into the Department of Mines for testing free of charge. A geological log would be appreciated.

Pump Test: This service can be provided by the driller or the pump distributor.

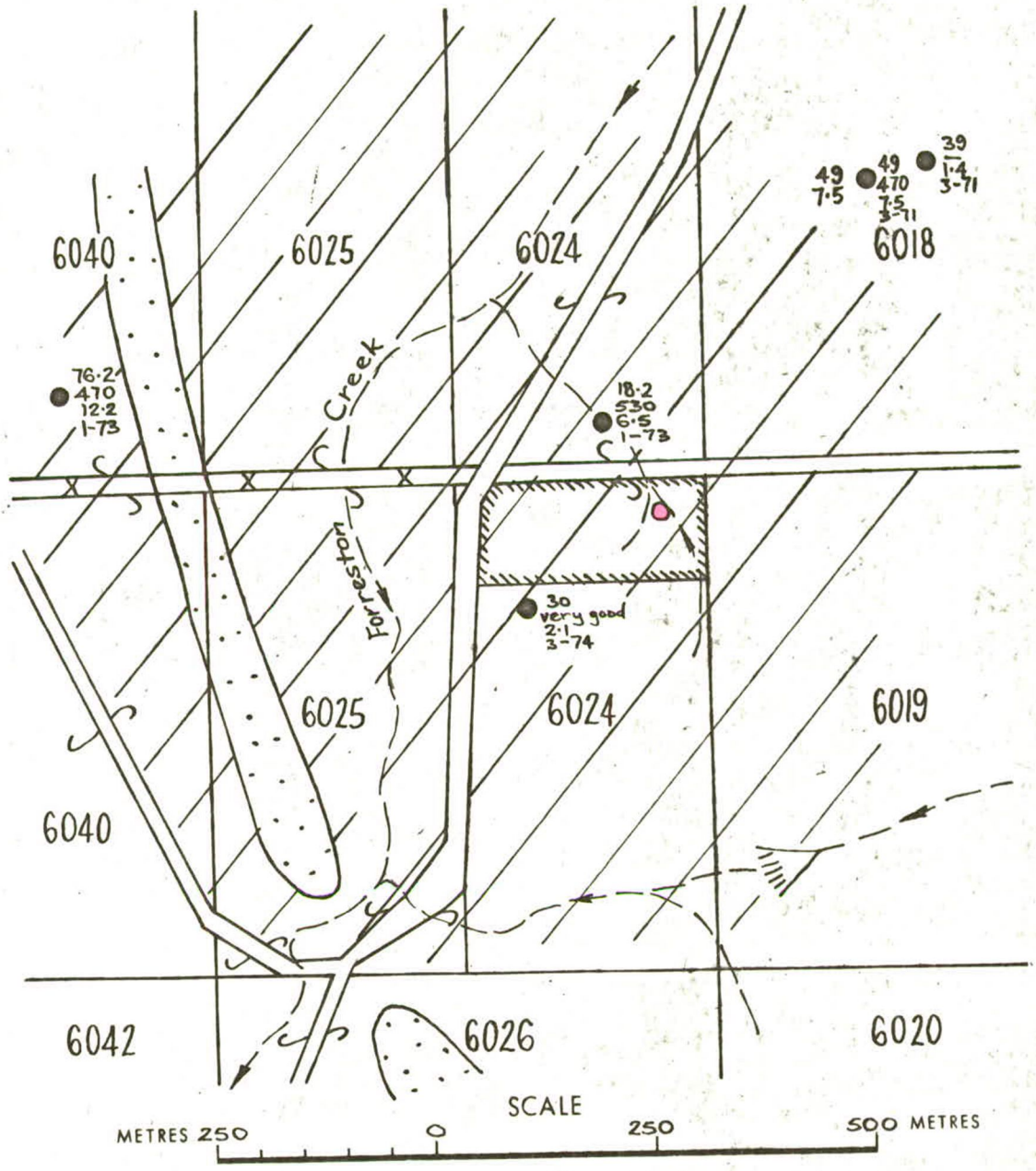
Summary

The property was inspected geologically and a borehole site is recommended as shown on the accompanying diagram. Drilling to a depth of up to 60 m is suggested where a supply of 4.0-7.5 litres/sec. (3-6,000 gals/hr.) is expected. The probable salinity is about 750 mg/l which is suitable for all general purposes.

SRB:JS
21st March, 1974.

S.R. BARNETT
GEOLOGIST
HYDROGEOLOGY SECTION

Survey Date : 7.3.74.



LEGEND

Fine to medium grained quart-mica schist

Interbedded quartzite

Existing borehole ● 160 —Depth in metres
2015 —Salinity in milligrams per litre
5·0 —Supply in litres per sec.
2-72 —Month , year

Well .....

Spring .....

Abandoned borehole .....

Proposed boresite .....

Strike and dip of bedding 60

Strike and dip of jointing 50

Strike and dip of foliation 35

Strike and dip of cleavage 45

Geological boundary .....

Fault line .....

Drainage lines .....

Surface storage .....

DEPARTMENT OF MINES - SOUTH AUSTRALIA

HYDROGEOLOGY SECTION	GROUNDWATER SURVEY PT. SEC. 6024 HD. TALUNGA S. A. STEAD	Date. 13 March '74
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Drn. D.J.M. Ckd.		