DEPARTMENT OF MINES
SOUTH AUSTRALIA

GROUNDWATER SURVEY

Hundred: Onkaparinga Section: 5033

- B. Stommill -

by

J.R. BARNETT
GEOLOGICAL ASSISTANT

Rept.Bk.No. 73/308
G.S. No. 5512
Hyd. No. 2610
D.M. No. 1156/73

20th December, 1973

DEPARTMENT OF MINES
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GROUNDWATER SURVEY

Location

General: 3 km west of Woodside

Region: 4

County: Adelaide

Hundred: Onkaparinga

Section: 5033

Name of Property: Weyland Park

Owner: B. Stonnill

Postal Address: 24 Margaret Avenue,
NORTH BRIGHTON. S.A. 5048

Telephone: Business 51 6870

Requirements

Water required for: Irrigation, stock and domestic use

Quantity: Not specified

Quality: As good as possible

HYDROGEOLOGICAL REPORT

Physiography and Land Use: The property inspected occupies a north-south trending alluvial valley between 350 and 366 metres above sea level with a north-south ridge following the western boundary of the property. The section is mostly cleared and is covered with thick pasture.

Climate:

Nearest rainfall station: Woodside

Mean annual rainfall: 828 mm (32.60 ins.)

Remark on rainfall pattern: Most of the rainfall (73%) falls between April and October with each of the winter months receiving 115 mm (4.5 ins)

Surface Hydrology:

Creek name: Unnamed main tributary of Onkaparinga River.

Characteristics: A southerly flowing stream which appears to contain water all year round.

Springs: None observed

Surface storage: None on property.

Geology

Soil Cover: A thick cover of clayey grey alluvial soil is complete over most of the property except on the ridge where some outcrop is visible.

Rock Units: Quaternary - alluvial flood plain deposits
Proterozoic - Burra Group; Undalya Quartzite

Lithology: Quaternary - undifferentiated silts, sands and gravels
Proterozoic - Undalya Quartzite; grey fine grained quartzite which forms resistant ridges in the vicinity. Unnamed grey micaceous metasiltstones are interbedded with the quartzites.

Direction and Amount of dip: The quartzites appear to be dipping steeply to the east.

Structural Features: Where exposed, outcrops of quartzite appear moderately fractured.

Aquifer Assessment:

Type: Free water table. Groundwater is stored in joints and fractures in the underlying bedrock. The storage capacity is

is therefore dependent on the degree of fracturing of the quartzite and metasiltstones.

Potential Recharge: Recharge results from infiltration of rainfall and downward percolation of runoff in drainage lines. Recharge is expected to be moderate to good because of the high rainfall, the relatively large run-off provided in the permanent stream and also the low salinities recorded in the area.

Borehole Site Location:

General: Two alternative borehole sites are recommended, each likely to produce similar results (see accompanying plan). Choice of location is left to the discretion of the owner.

Reason for location: Both sites are designed to intercept the quartzite below the water table and both locations receive optimum recharge from the creek.

Proposed Depth: 75 - 90 m

Expected Yield: 2.5 - 5.0 litres/sec. (2-4 000 gals/hr.)

Expected Quality: Less than 1 000 mg/l

Probable Log: Alluvium followed by quartzite with minor interbedded metasiltstones.

Drilling and Testing Recommendations:

Drilling Hazards: The bore should be cased to the top of unweathered bedrock 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 for testing free of charge. A geological log would be appreciated.

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

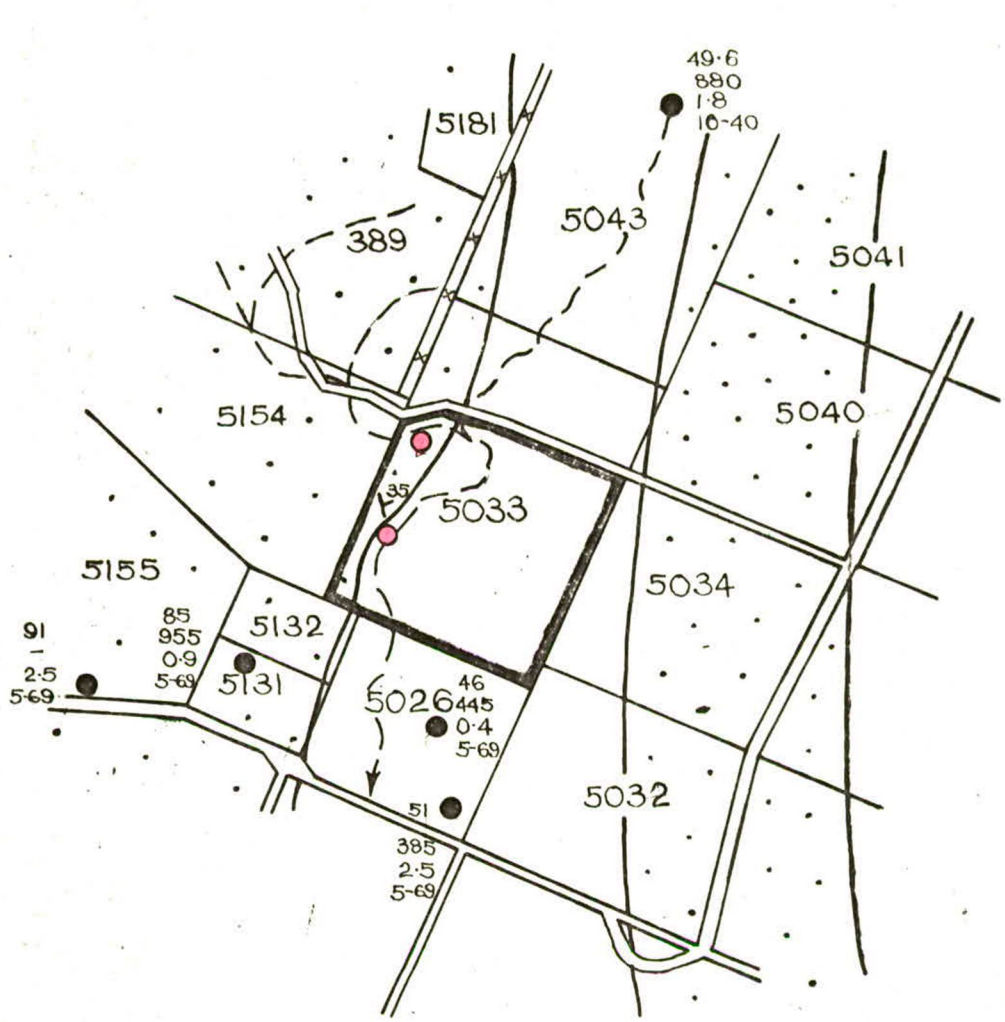
Summary: The property was inspected geologically and two alternative boresites are recommended as shown on the accompanying plan. As

the production of both bores is expected to be similar, the final choice is left to the owner's discretion. Drilling to a depth of 75-90 m is suggested and a supply of 2.5 - 5.0 litres/sec (2-4 000 gals/hr) is expected. The probable salinity of less than 1 000 mg/l is suitable for all household uses, general garden plants, irrigation and the watering of stock.

S.R. BARNETT
GEOLOGICAL ASSISTANT
HYDROGEOLOGY SECTION

Survey Date: 6.12.73

SRB:TG
20.12.73



SCALE

METRES 500 0 500 1000 METRES

LEGEND

Undalya Quartzite–grey fine-grained quartzite

Interbedded metasiltstone

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	Date 13 December 1973
Compiled. S.R.Barnett	SECTION 5033 HD. ONKAPARINGA	Drg.No. S10629
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