/34

GROUNDWATER SURVEY

HD. NOARLUNGA, SEC. 965N

A. F. WILLIAMS

Department of Mines
South Australia —

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DEPARTMENT OF MINES
SOUTH AUSTRALIA

GROUNDWATER SURVEY

Hundred Noarlunga, Section 965N

by

A.F. WILLIAMS
GEOLOGIST
HYDROGEOLOGY SECTION

Rept.Bk.No. 73/34
G.S. No. 5041
Hyd. No. 2483
D.M. No. 148/73

9th February, 1973.

DEPARTMENT OF MINES
SOUTH AUSTRALIA

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GROUNDWATER SURVEY

Location

General: Approximately 2 km from Mylor.

Region: 4

County: Adelaide

Hundred: Noarlunga

Section: 965N

Name of Property: Sanctuary Woods

Owner: Mrs. I. Dix

Postal Address: Box 12,
ALDGATE. S.A. 5154.

Telephone: 88-5229 (home)
23-2444 (work)

Requirements

Water required for: Household use and some gardening.

Quantity: 0.7 litres per second.

Quality: Less than 1200 mg/l.

Other factors: The quality of water suitable for garden plants varies enormously and care should be taken before applying bore water.

HYDROGEOLOGICAL REPORT

Physiography and Land Use:

The applicant's property lies on a fairly high level ridge in the Adelaide Hills south of Mount Lofty. The land is used for housing and gardening. All but a few graden plants are native.

Climate:

Nearest rainfall station: Bridgewater

Mean annual rainfall: 1080 mm

Remarks on rainfall pattern: According to records kept by a neighbour over the last 20 years, rainfall averages about 1,000 mm - a little less than at Bridgewater. The overall pattern is similar however, with most of the rain falling in the period May to September. The owner requires a source of water during summer.

Surface Hydrology:

Creek name: Unnamed

Characteristics: Ephemeral - running only during winter.

Springs: No springs are recorded on the property.

Surface storage: No dams exist on the applicant's land however one small one has been constructed on adjoining land. Apparently it fails to hold water.

Geology

Soil Cover: The topsoil consists of sandy, grey to brown silt with some clay. Below the soil is yellower and contains bedrock fragments including quartz and sandstone pebbles.

Rock Units: Aldgate Sandstone - Torrensian

Lithology: The only outcrop on the property consists of quartz veins the rest being covered by topsoil. Some bedrock was seen at the bottom of a well on adjacent land. Sandstone fragments found in the topsoil are medium to coarse grained, grey to white with some recrystallization. Some clay is evident in the weathered rock indicating possible presence of feldspar.

Direction and Amount of dip: Not observed on the property but information on the Echunga Geological Map shows a shallow dip of about 20-30° to the south east.

Aquifer Assessment:

Type: Free water table - water is expected to be present in pore spaces, joints and fractures in the Aldgate Sandstone.

Extent: The aquifer underlies the whole of the area inspected.

Potential Recharge: With such a high rainfall, recharge is expected to be excellent. It will be derived mainly from lateral and vertical seepage of rain water.

Borehole Site Location:

General: Practically anywhere on the property is suitable for drilling. The site is left to the owner's convenience but it should be noted that a bore near the house would cost more than one at the bottom end of the property because it would need to be deeper.

Reason for location: From a study of boreholes in various locations surrounding the owner's land, all appear to have produced good quality water although of varying supplies. The applicant's requirements should be satisfied by boring at the lowest point on her property.

Proposed Depth: 60-90 m.

Expected Yield: 0·6-12 l/sec. (500-1000 g.p.h.).

Expected Quality: Less than 1000 mg/l.

Probable Log: 0-2 or 3 m - Soil Cover

2-90 m - Sandstone and quartzite with some thin interbedded shale.

Drilling and Testing Recommendations:

Drilling Hazards: No hazards are expected, the top few metres should be cased to prevent soil and weathered bedrock from caving and blocking off the bore hole. Depending on the strata encountered below this top zone, it may or may not be necessary to case the hole further.

Sampling: Any waters cut should be sampled and brought into the Department for testing (free of charge). A geological log of the strata encountered would be appreciated.

Pump Test: This service can be arranged with the driller or a pump distributor.

Summary:

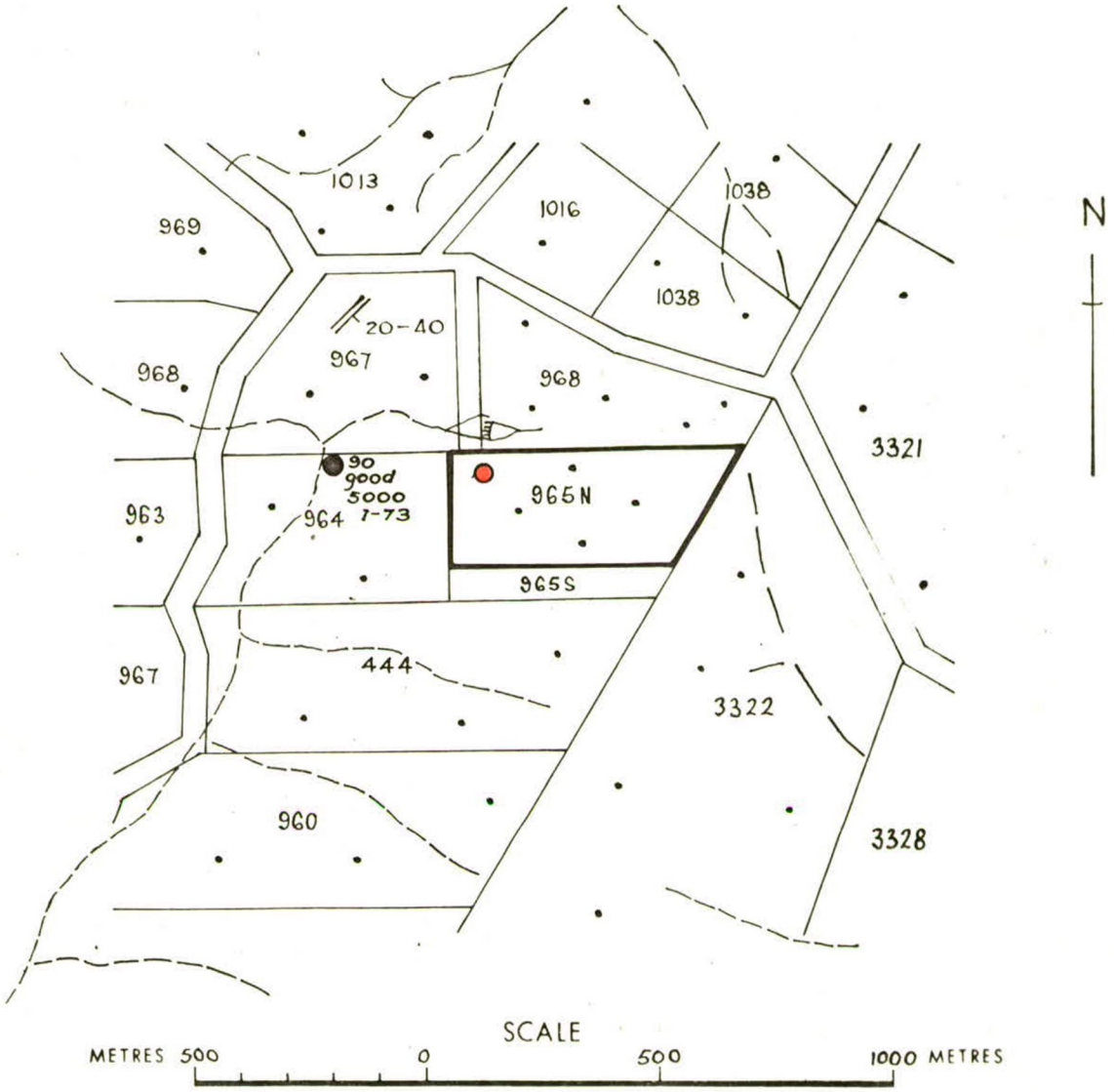
No particular site was chosen on the property but to keep costs to a minimum and achieve a large supply the site chosen by the owner near the old shed by the front gate should be drilled as this is at about the lowest position on the property and would require the least expenditure.

In view of an estimated cost of about $2,000 and the high average rainfall, some consideration should be given to increasing surface storage by the way of extra rainwater tanks. This may be far cheaper and provide enough water during summer for gardening needs.

AFW:JS
9th February, 1973.

A.F. WILLIAMS
GEOLOGIST

Survey Date: 6.2.73.



LEGEND

Aldgate Sandstone – medium to coarse grained white quartzite and sandstone with quartz veins overlain by 1-3 metres of clayey topsoil.

Existing borehole ● 160 – Depth in metres
2015 – Salinity in milligrams per litre
5000 – Supply in litres per hour
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 SEC. 965N. HD. NOARLUNGA MRS. I. DIX	Date 14 FEB. 1973
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P.F. No. S7359A MH