

74/50.

RECORDS

Rept.Bk.No. 74/59

Depot



GROUNDWATER SURVEY

County of Sturt, Hundred of Tungkillo, Section 442

- A.L. Biach -

S.R. BARNETT

Department of Mines MICROFILMED
South Australia —

74/50

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GROUNDWATER SURVEY

County of Sturt, Hundred of Tungkillo, Section 442

- A.L. Blach -

S.R. Barnett

13th February, 1974

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept. Bk. No. 74/50
G.S. No. 5368
Hyd. No. 2624
D.M. No. 162/74

GROUNDWATER SURVEY

Location

General: 4km southwest of Tepko.

Region: 3

County: Sturt

Hundred: Tunghillo

Section: 442

Owner: A.L. Blach

Postal Address: C/- P.C. Tepko, E.A. 5254

Telephone: Tepko 25

Requirements

Water required for: Irrigation of lucerne, clover and
vegetables, and piggery.

Quantity: Not specified.

Quality: Less than 3,000 mg/l.

HYDROGEOLOGICAL REPORT

Physiography and Land Use:

The property inspected lies between 175 and 200 metres above sea level and consists of rounded hills of moderate relief to the west with a broad flat gully in the eastern portion of the property. It is virtually completely cleared of natural vegetation and is used for the grazing of stock.

Climate:

Nearest rainfall station: Tepko.

Mean annual rainfall: 367mm (14.45 ins.)

Remarks on rainfall pattern: Most of the annual rainfall (71%) falls between April and October with each of the winter months receiving about 38mm (1.50 ins.).

Surface Hydrology:

Creek name: Unnamed.

Characteristics: An ephemeral stream which flows only after heavy rainfall flows towards the east from the centre of the property.

Geology

Soil Cover: A variable cover of reddish-brown silty soil is complete over most of the property except on hilltops where bedrock outcrops prominently.

Rock Units: Cambrian-Kanmantoo Group.

Lithology: Kanmantoo Group - fine to medium grained quartz-mica schist.

Direction and Amount of dip: The regional dip is steeply to the west over most of the property.

Structural Features: The axial plane of a northerly plunging syncline passes through the western part of the property.

Aquifer Assessment:

Type: Free water table. Groundwater is stored in joints and fractures in the underlying bedrock. The storage capacity is therefore dependent on the degree of fracturing and also the degree of weathering of the schists. The clayey weathering products of these rocks tend to infill the joints and fractures, leading to decreased supplies and an increase in salinities due to ion exchange with the water.

Potential Recharge: Recharge results from infiltration of rainfall and downward percolation of runoff in drainage lines. Due to the low rainfall and the impermeable nature of the clayey weathered bedrock, recharge is expected to be poor.

Borehole Site Location:

General: Two bores already on the property have salinities of approx. 5000 mg/l and because of the requirement for water of less than 3000 mg/l, further drilling cannot be recommended.

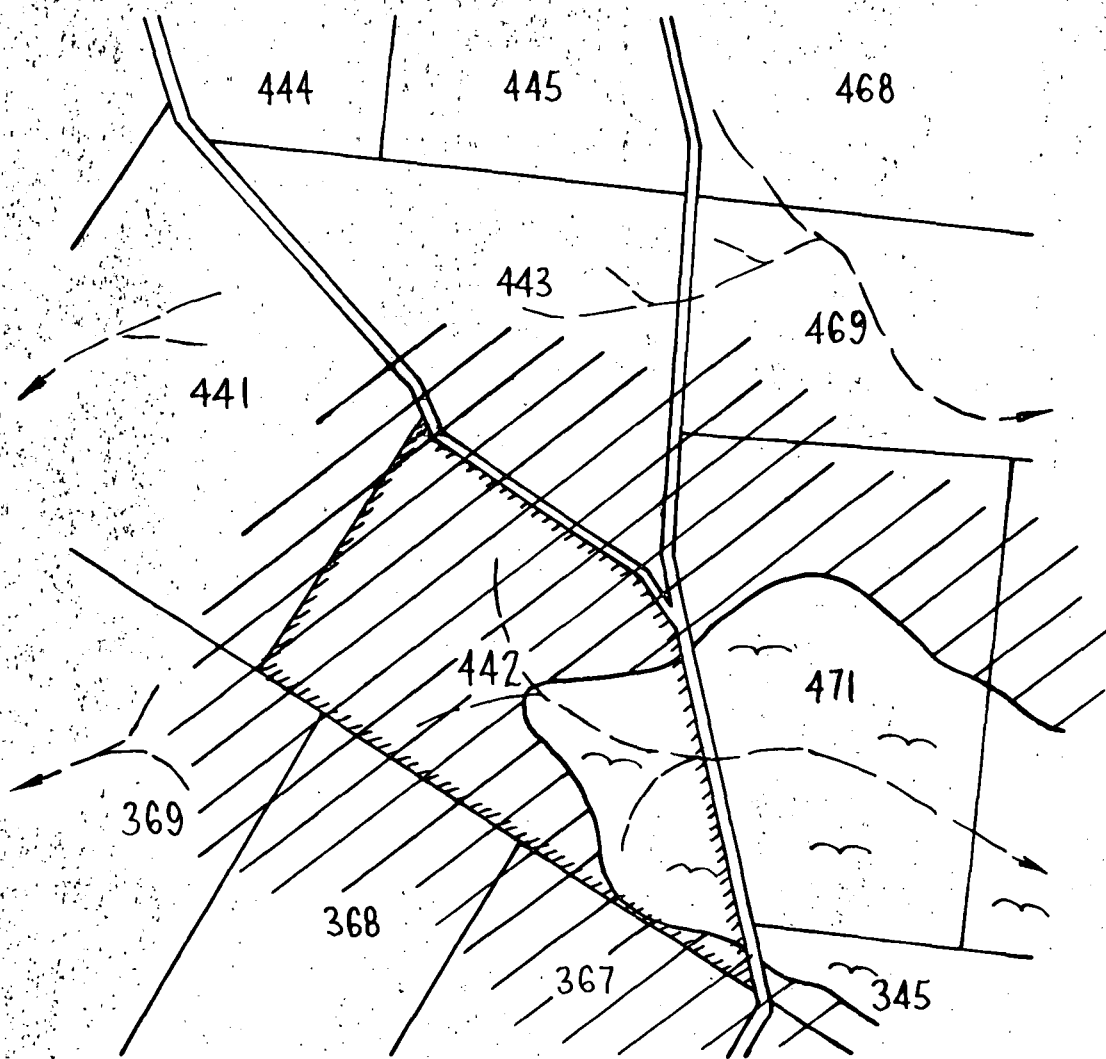
SUMMARY

The property was inspected geologically and due to the high salinities already recorded on the property (approx. 5000 mg/l) and the poor recharge prospects, further drilling cannot be recommended. Instead the feasibility of constructing a small dam in the gully to the west of the house should be investigated.


Geologist S.R. Barnett

Survey Date: 7.2.74

SRB:JL
13.2.74



METRES 250 0 SCALE 250 500 METRES

LEGEND



Quaternary - alluvium; sands and clays

Kanmantoo Group - medium grained quartz-mica schist

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

Existing borehole 160 - Depth in metres
 2015 - Salinity in milligrams per litre
 5.0 - Supply in litres per person
 7-72 - Month, year

Well
 Spring
 Abandoned borehole
 Proposed borehole

DEPARTMENT OF MINES - SOUTH AUSTRALIA

HYDROGEOLOGY SECTION

Compiled. *S.R. Barnett*

Drn. *D.J.M.* Ckd.

GROUNDWATER SURVEY
 SEC. 442 HD. TUNGKILLO
 A. L. BIACH

Date. 13 Feb. 74

Drg.No.
 S10713
 H64