copy 3

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS

RECORDS:

1944/46

REPORT ON THE POSSIBILITIES OF UNDERGROUND WATER ON PINEY CREEK PASTORAL LEASE, STROMOLO DISTRICT, A.C.T.

by

H.B. OWEN.

DEPARTMENT OF SUPPLY AND SHIPPING.

Mineral Resources Survey Branch.

REPORT ON THE POSSIBILITIES OF UNDERGROUND WATER ON PINEY CREEK PASTORAL LEASE, STROMLO DISTRICT, A.C.T.

Report No. 1944/46.
Plan No. 1151.

On the 21st November, 1944, the above lease, held by Mr. G.D.C. Tanner, was visited in response to his request for advice regarding water supply.

The lease occupies an area of about 2 square miles and is 8½ miles by road west from Capital Hill and 2 miles northwest from Stromlo Observatory. It is bounded on the south by the Uriarra road and on the north by a narrow strip of reserved land flanking the Molonglo River.

The attached sketch map shows the principal features of the area. Except for Ranger Hill and minor rocky prominences, the surface slopes gently from the southern boundary to near the northern end of the block from where it descends steeply to river level.

As shown in the figure, the greater part of the surface of the block is occupied by outcropping "porphyry" and a small area of the eastern boundary is covered with an appreciable thickness of alluvium.

Piney Creek has cut its bed to a depth of 10 feet in this alluvium which consists of gritty clay with thin seams of coarser grit and angular gravel without admixture of clayey matter.

Two such seams of gravel exposed in the creek banks, each about 3 inches thick and 5 feet below the surface, are at present discharging very small quantities of water amounting to a few gallons per hour in each case (about 100 gallons per day). Previously they had yielded very much larger volumes of water, but with the prolonged dry weather, the supply has diminished to the trickle abovementioned. These seepages into the creek channel now represent the only source of water on the southern part (i.e. home paddock) of the block, but there are similarly small seepages from jointed porphyry in the bed and banks of the unnamed creek on the western side of the holding.

It is considered that the alluvial-filled closed basin offers a reasonable prospect of yielding a supply of water and Mr. Tanner was advised to test the area with an auger. It was suggested to him that a site near the centre of the 'flat' would afford the best prospect, but for his own convenience, he proposes to start near the southern margin of the alluvial area first, and then, in the event of failure, to move downstream on a line near to and parallel to the creek.

It is expected that the alluvium will be found to be shallow and will not exceed a thickness of 30 feet over bedrock.

The porphyry does not show evidence of deep weathering and is comparatively fresh where exposed on the steeper slopes and in stream channels. It is unlikely, therefore, that an appreciable thickness of weathered porphyry underlies the alluvium.

The term "porphyry" as used in these notes requires some qualification. In places, the rock bears a close resemblance in the hand specimen to that at the Cotter Dam, in others it is indeterminate in character to casual observation and may be a tuff. Near the junction of Piney Creek and its western branch, the rock has a banded texture which strikes N.20°E. and dips steeply west-northwest. Quartz veins are numerous, especially in the northern half of the lease. Joints are closely spaced and one strongly developed system noticed on the eastern side of Ranger Hill trends northerly. Flat jointing is exposed in the beds of the creeks.

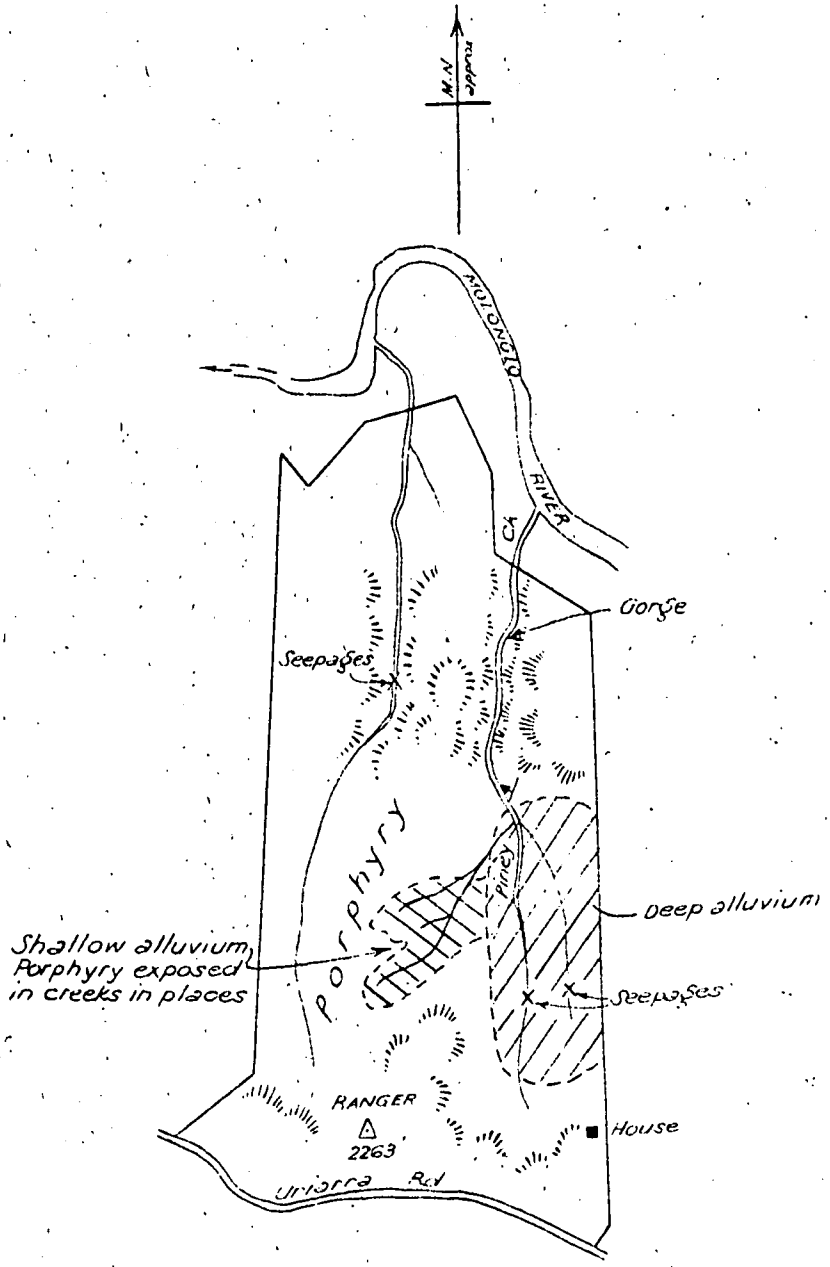
Should adequate testing of the alluvium fail to yield a sufficient supply of water, boring in an area where the porphyry rock is well jointed could be tried, but this course is not recommended without a more detailed examination of the area so that the most favourable site can be selected.

H B Owen.

CANBERRA, A.C.T.
27th November, 1944.

H. B. OWEN,
Geologist.

SKETCH PLAN
— OF —
PINEY CK. LEASE
STROMLO DISTRICT, A.C.T
Scale 1" = 40 chs.



H. B. Owen
Geologist
Mineral Resources
Survey
27-11-44.

1151