AVAILABILITY OF GROUNDWATER ON THE GARDEN AND AMBALINDUM STATIONS

Introduction

The Garden and Ambalindum stations were visited between the 7th and 10th of January, 1962 subsequent to a request for advice on the availability of groundwater in these areas from the District Engineer, Water Resources Branch, Alice Springs. One site was selected on the Garden and **two** on Ambalindum.

The positions of the three sites are shown in figures 2 and 3.

General Geology

Gneiss, granites, and amphibolites of the Precambrian Arunta complex crop out over the major part of the Garden and Ambalindum Stations. These rocks are moderately hard to very hard in outcrop except for localised areas where weathering has brought about some degree of decomposition.

The permeability of the rocks of the Arunta Complex is generally very low except where shears and the intrusion of pegmatite dykes has created cracks, fissures, and joints which are capable of yielding useful quantities of groundwater.

Alluvium is present along the major creeks, but except for parts of the Hale River Valley it is usually shallow.

Description of Sites

1. **The Garden**

   This site is about 10 miles south of the homestead and 2 miles south of Georgina Gap. A bore on this site should intersect a pegmatite within medium hard gneiss at a depth of 100-150 feet. The foliation in the gneiss dips to the north at 15 degrees. The pegmatite cuts across the strike of the gneiss foliation at a low angle and dips to the north at about 80 degrees. It is expected that groundwater will be obtained either in the pegmatite or the associated shears.

2. **Ambalindum**

   The first site on Ambalindum is on Sprigg Creek, about 1 mile north of the Sprigg Creek Bore.

   A bore on this site should intersect a pegmatite within medium hard gneiss at a depth of about 100 feet. The foliation in the gneiss dips to the west at 30 degrees. The pegmatite dips to the south-west at about 70 degrees.

   The second site is on the Euckitta Creek, 1 mile east of Euckitta Bore. A bore on this site should intersect a 2 to 3 foot thick
(2)

pegmatite beneath 100 feet of gneiss. The pegmatite is conformable with the S-foliation in the gneiss which dips at 45 degrees to the east. Several pegmatites intrude the country rock in the immediate vicinity of the site. One of these should be intersected at a depth of 100-200 feet and may provide an additional supply.

K. Hocken
Resident Geologist.
FIG. 3. OVERLAY TO PHOTO No 5041, RUN 1, HARDING SPRINGS 4-MILE SHEET.

LEGEND

- Strike and dip of
- Bedrock
- Pagmatite
- Equipped Bore

Scale: 1 inch = 4000 feet.