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REPORT ON WATER SUPPLY AT MANBULLOO STATION, NORTHERN TERRITORY.

by

N. J. MacKay.

Records 1957/62.

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L I S T O F P L A T E S.

Plate 1. - Geological Map, Manbulloo Station, Northern Territory.

Scale: 1 inch = 4 miles.

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Introduction:

A visit was made to Manbulloo Station, situated near Katherine, for the purpose of selecting bore sites. The investigation was carried out at the request of Australian Investment Agency Pty. Ltd. during the period 13th to 15th May, 1957. Three bore sites were selected in areas where water supplies are required in order to develop the pastoral property.

The general geology of the area and the locations of known bores and the selected bore sites are shown on Plate 1.

General Geology:

All the rocks in the area covered by Manbulloo Station are sedimentary rocks but they are divided into two distinct groups with a large difference in age.

The older group is the Daly River Group which is Middle Cambrian in age and consists of interbedded limestone, sandstone and shale. These sedimentary beds dip at very low angles and form a broad basin called the Daly River Basin. The basin is elongated in a northwestly direction. The thickness of the sedimentary sequence is not known accurately but it is probably about 2,000 feet.

The Mullaman Group overlies the Daly River Group as a thin veneer of horizontally-bedded sediments. These rocks consist of sandstone, siltstone and conglomerate which are Cretaceous in age.

They form flat-topped hills and occupy the higher country but, in the areas of lower elevation, where they have been removed by erosion, the older beds of the Daly River Group are exposed. The maximum thickness of the Mullaman Group on Manbulloo Station is about 100 feet.

Hydrology:

Adequate supplies of water are obtainable from porous limestone and sandstone of the Daly River Group. The quality of the water should be good. Water will not be obtained from within the Mullaman Group as the beds are thin and occupy areas of high elevation. Provided due attention is paid to topographic features, supplies of water should be obtained from bores on Manbulloo Station at depths of less than 350 feet.

Available records of bores previously drilled are as follows:-

(a) No. 3 Stock Route bore was drilled to a depth of 228 feet and a good supply of water struck at 200 feet. The static water level of the bore is 106 feet below the surface of the ground.

(b) An old bore, sunk by the Army during World War II, is reported to be about 150 feet in depth. The water supply is stated to be good and this bore could be equipped and utilised if it is required.

(c) Shallow wells at Manbulloo homestead have yielded good supplies of water from alluvium along the Katherine River.

(d) Noakes (1949) states:-

> "At least one bore in the vicinity of Manbulloo encountered artesian water in limestone at a depth of 91 feet below the surface. The bore flowed at the rate of 800 gallons per hour, but 4,000 gallons per hour were produced by pumping.".

New Bore Sites Selected:

Site MA is beside Limestone Creek and alongside the cattle yard. The bore will intersect limestone and sandstone beds which strike at 345° and dip at 10° to 15° to the east. Water should be struck within a depth of 200 feet.

Site MB is situated on Junction Creek and northwest of a high tableland which is capped by rocks of the Mullaman Group. At the surface near the bore site, there is a thin layer of silicified sandstone which is underlain by pink limestone of the Daly River Group. Water should be obtained within 250 feet of the ground surface.

Site MC is situated near the head of Bull Creek and just to the east of a large tree-less plain. The cover of Mullaman sandstone is thin at the site (about 20 feet), and a good supply of water should be obtained from the underlying beds of limestone and sandstone within a depth of 300 feet.

The positions of the three (3) bore sites are shown on Plate 1. The sites were selected while accompanied by Mr. P. Morris of Australian Investment Agency Pty. Ltd. and Mr. R. McLoughlin of Manbulloo Station.

Reference.

Noakes, L.C. 1949 - - A Geological Reconnaissance of the Katherine-Darwin Region, N.T. Bureau of Mineral Resources - Australia, Bull. 16.

Resident Geologist's Office
Darwin, Northern Territory.
24th July, 1957.

GEOLOGICAL MAP
MANBULLOO STATION
NORTHERN TERRITORY

TRUE NORTH

4 3 2 1 0 1 2 15 16 MILES

SCALE

REFERENCE

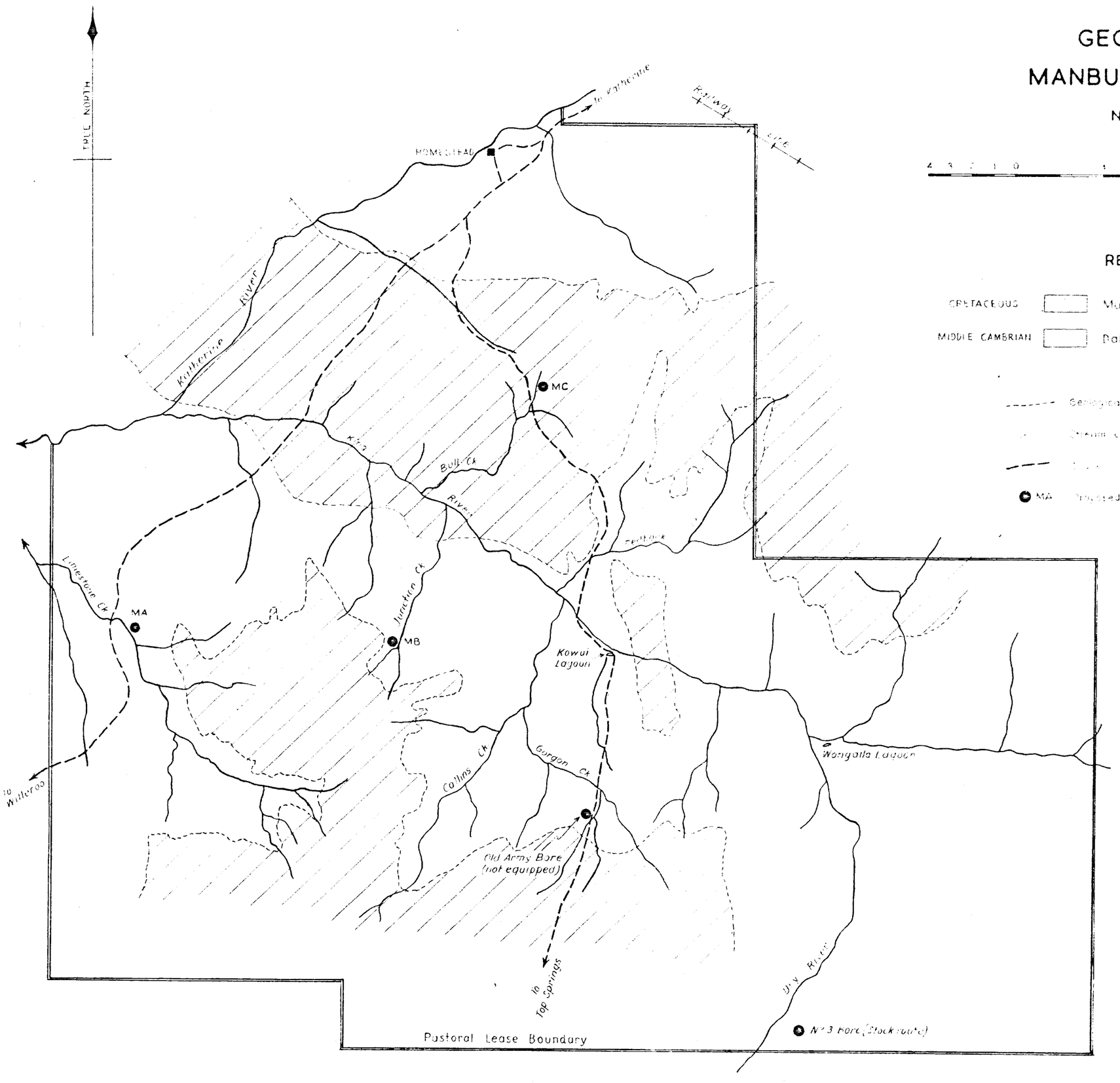
CRETACEOUS — Mullaman Group — [illegible]

MIDDLE CAMBRIAN — Daly River Group — [illegible]

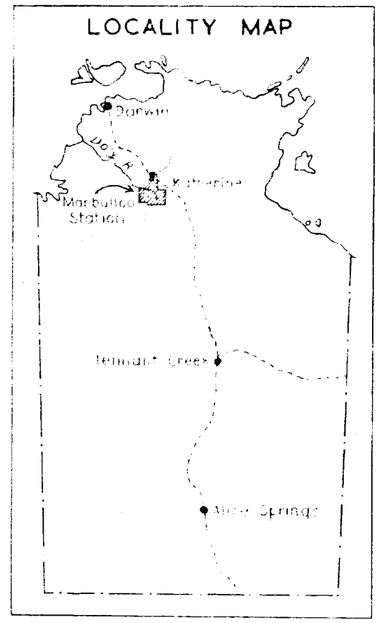
Geological Boundary (position approximate)

Stream channel

MA Prospect bore



LOCALITY MAP



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