

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS

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REPORT ON PHOTO-INTERPRETATION OF DONORS HILL
1:250,000 SCALE SHEET, QUEENSLAND

by

J.C. Rivereau

Institut Français du Pétrole

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

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TABLE I

PHOTOGEOLOGICAL MAP

(in back pocket)

The opinions and views expressed in this Record are those of the author and are not necessarily those of the Bureau of Mineral Resources.

REPORT ON PHOTO-INTERPRETATION OF DONORS HILL
1:250,000 SCALE SHEET, QUEENSLAND

Summary

Lower Cretaceous rocks, sandstone, siltstone and limestone, crop out in the central part of the Sheet, capped by a scarp forming-duricrust. This central part is flanked to the east and west by a flat sandy and alluvial plain.

Well-bedded, folded Lower Proterozoic rocks occupy a small area in the south-western corner of the Sheet.

Introduction

Donors Hill 1:250,000 scale Sheet is situated in the Carpentaria Basin (between 19° and 18° S latitude and $139^{\circ}30'$ and 141° E longitude). The photo-interpretation of this area has been carried out with the purpose of assisting in the planning and execution of the field work. The air photographs used were flown in 1951 at a nominal scale of 1:48,000. Detail from individual photo scale overlays has been reported on overlays of the National Mapping photo-scale compilation Sheets and then reduced to a scale of 1:250,000.

Physiography

The Sheet area can be divided into three parts:

1. the western part which is a flat, featureless plain of sand and alluvium of the Leichhardt River;
2. the central part, composed of low mesas of laterite or duricrust overlying a formation presumably Lower Cretaceous;
3. the eastern part which is quite similar to the western one, and consists of alluvium of the Flinders River.

The rivers and their tributaries flow to the north, towards the nearby Gulf of Carpentaria.

Stratigraphy

In assigning possible geological equivalents to the photogeological units, reference has been made to the adjoining Dobbyn 1:250,000 scale Sheet (Carter, 1959).

Precambrian Bl, Bl₁, Lower Proterozoic

It crops out in the south-western corner of the Sheet area where it forms a well-bedded formation, regarded as sandstone and quartzite, folded in a synclinal structure; no other outcrop of this formation was found throughout the studied area.

Mesozoic Kl, Lower Cretaceous

This formation occurs mainly in the central part of the Sheet and is best exposed at the foot of the mesas in the duricrust which usually overlies it. It has a soft appearance and, presumably, consists of limestone, sandstone and siltstone. Where there is no duricrust the outcrops are of insignificant thickness and covered with residual soil and in places show a photogeological pattern which can be confused with caliche or travertine.

Cainozoic Czd, Duricrust (or laterite)

As indicated above, the duricrust forms a widespread capping on the lower Cretaceous rocks. In some places it forms very low, flat outcrops but usually shows a typical scarp-forming tableland, particularly in the eastern part, where the scarp rises up to about a hundred feet above the Flinders River plain.

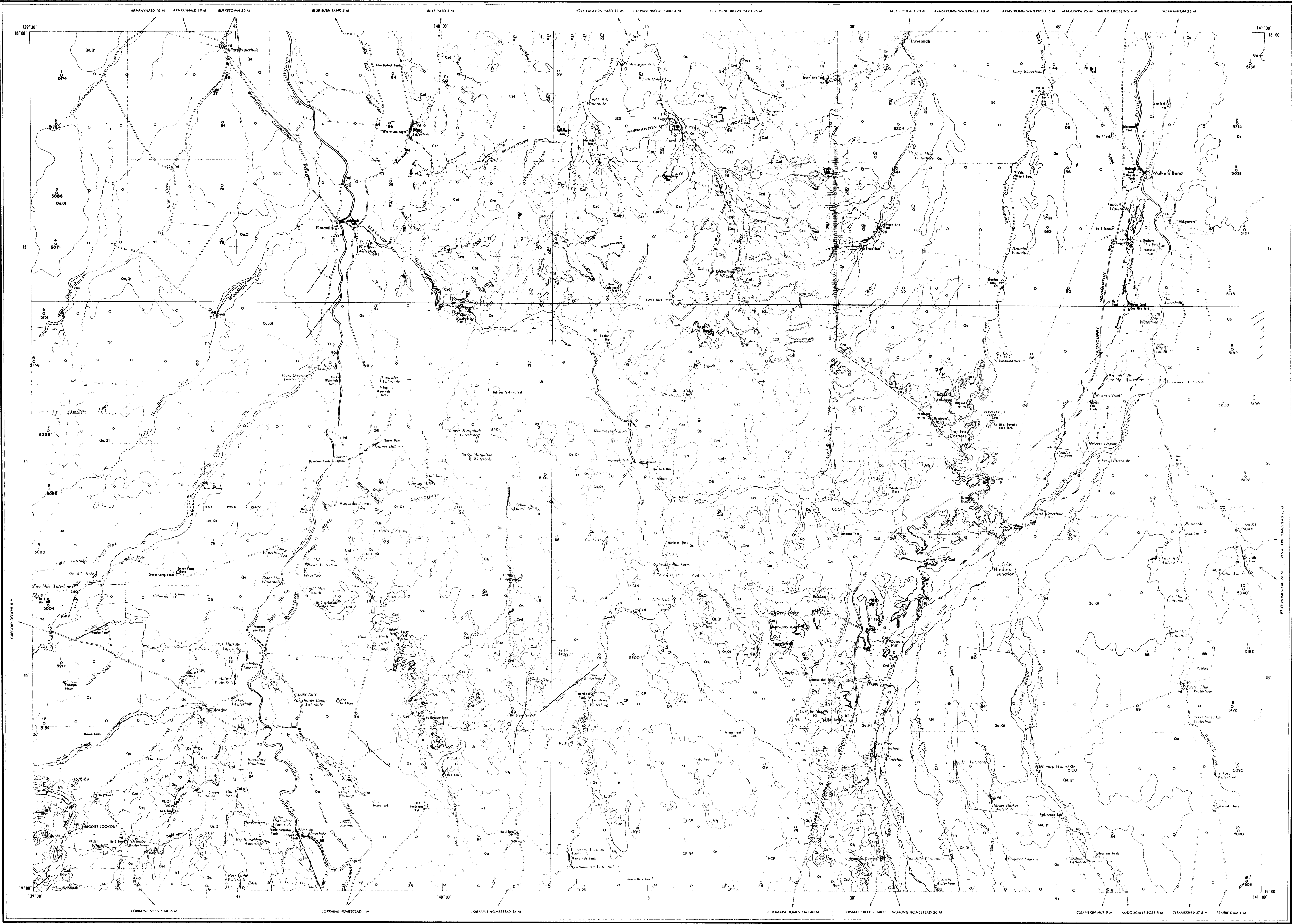
Apart from some structural information within the Precambrian in the south-west, and a few lineaments elsewhere, no particular structure has been recorded throughout the Sheet area.

References

CARTER, E.K., 1959 - Dobbyn 4-mile Geological Series, Bur. Min. Resour. Aust. explan. Notes, 15.

DONORS HILLTABLE ISTRATIGRAPHIC TABLE

Photogeological character	Possible geological equivalent		
	Qa - Alluvium	QUATERNARY	CAINOZOIC
	Qs - Sand		
	Qs ₁ - Sand and timber		
	Qt - Caliche		
	Qc - Colluvium		
	Cz - Residual soil, sand	UNDIFFERENTIATED	
Medium grey toned, mesa-form	Czd - Duricrust or laterite		
Light toned, medium to soft appearance	Kl - Sandstone	LOWER CRETACEOUS	MESOZOIC
Bedded and folded outcrop	Bl } - Sandstone, quartzite	LOWER PROTEROZOIC	PRECAMBRIAN
	Bl ₁ }		



REFERENCE

Photogeological Character Possible Geological Equivalent

Qa Alluvium

Qs Sand

Qst Sand and timber

Qt Caliche

Qc Colluvium

Cz Residual soil, sand

Czd Duricrust or laterite

Medium grey toned, mesa-form

Kl Sandstone

Light toned, medium to soft appearance

Bl Sandstone, quartzite

Bedded and folded outcrop

QUATERNARY

CAINOZOIC

UNDIFFERENTIATED

LOWER CRETACEOUS

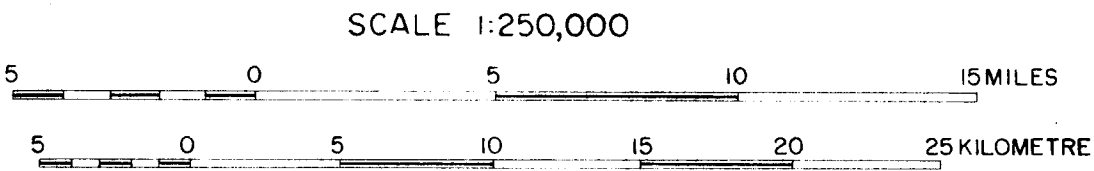
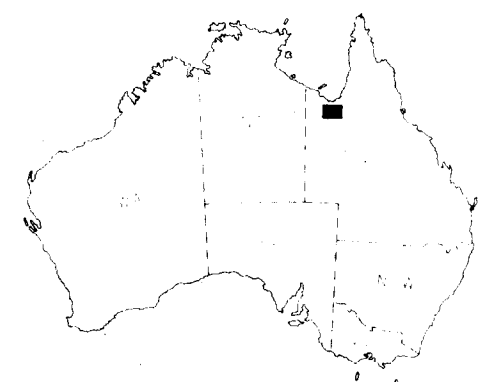
MESOZOIC

LOWER PROTEROZOIC

PRECAMBRIAN

- Lithological boundary
- Probable lithological boundary
- Anciflinal axis
- Synclinal axis
- Fault
- Probable fault
- Edge of bed
- Probable edge of bed
- Edge of bed expressed as scarp
- Estimated dips
 - Horizontal
 - Very low
 - Low
 - Medium
 - Steep
 - Vertical
- Trend line
- Joint pattern
- Topographic scarp
- Laterite (L), Terrace (T), Scree (S)
- Dyke
- Principal road
- Minor roads and tracks
- Railway line
- Telephone line
- Fence
- State boundary
- Mine
- Homestead
- Yd Yard
- Windpump
- Airport or Airfield, Landing ground
- Bore
- Tank
- Well
- Spring
- Waterhole
- Dam
- Clay pan
- Photo-centre points
- Photo-centre points-adjoint sheet

Compiled by the Bureau of Mineral Resources, Geology and Geophysics.
Detail adjusted to photostatic compilation prepared by the
Royal Australian Survey Corps.
Aerial photography by Royal Australian Air Force; complete vertical
coverage at 1:48,000 scale. Transverse Mercator Projection



INDEX TO ADJOINING SHEETS

WESTMORE LAND	BURKETOWN	NORMANTON
LAWN HILL	DONORS HILL	CRUYDON
CAMOOWEAL	DOBBYIN	MILLUNGERA

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