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Report on Photo-Interpretation of the Waterloo 1:250,000 Scale Sheet, Northern Territory

by

C. Maffi

REPORT ON PHOTO-INTERPRETATION OF THE WATERLOO 1:250,000 SCALE SHEET, NORTHERN TERRITORY.

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Contents

SUMMARY

Upper Proterozoic rocks crop out in the northern, central and eastern parts of the sheet. The lower members are Timber Creek Formation and Skull Creek Limestone; they are unconformably overlain by the Auvergne Group.

The upper formations of the Auvergne Group are in many places eroded and overlain unconformably by a succession of sandstones and conglomerates which, in part, were recognized to be of glacial origin.

The Antrim Plateau Volcanics, considered of Lower Cambrian age, unconformably overlie the Proterozoic rocks. They occupy the western and southern parts of the sheet.

The lower members of the Negri Group, of Middle Cambrian age, overlie the Volcanics in apparently conformable succession. They crop out in the central west and in the southwestern corner of the sheet.

A mantle of laterite covers Proterozoic rocks in the southeastern quarter. Duricrust, soil and alluvium occur on the older rocks; in places they are widely developed.

The general structural trend is north-northeast, the dip being oriented west-northwest. However several minor folds with different orientations complicate the picture.

Some units, namely the Jasper Gorge Sandstone and Antrim Plateau Volcanics, are strongly fractured. Several faults have considerable vertical displacements.

INTRODUCTION

This study was accomplished with the purpose of assisting in the planning and execution of future field work.

The photo-interpretation was carried out on black and white prints of vertical air-photographs taken by RAAF in 1948. The photo-coverage data are: direction of runs: east-west; focal length: 152.2 mm; flight altitude: 25,000 feet; nominal scale: 1:50,000; forward overlap: 60 %.

Previous work, listed in the References, was used as a guide for the photo-interpretation, particularly to relate morphological units to stratigraphy. Overlays on every second photograph were annotated, then modified where necessary after a two weeks field check.

The annotation was compiled on overlays of the photoscale planimetric map prepared by National Mapping in 1960. The compilation was photographically reduced to 1:250,000 scale, assembled and combined with the National Mapping 1:250,000 planimetric map to obtain a composite print.

Access to the area from the north is provided by the Timber Creek - Kununurra and the Timber Creek - Bullita roads; from the west, by the Kununurra - Rosewood road; from the east, by the Victoria River Downs - Humbert River road; from the south, by the Wave Hill - Limbunya - Waterloo road. Within the sheet the road system is poorly developed in the western half, and practically non-existent in the eastern half.

PHYSIOGRAPHY

The West Baines River divides the sheet area, roughly from south to north, into two parts with different physiography.

In the eastern part, a thick sequence of resistant sandstones, slightly dipping toward the west, overlies easily erodible rocks. The sandstones form a mesa which, in the east, towers above a rolling plain and, in the west, gradually slopes down to the level of the river. The drainage on the mesa is mostly fracture-controlled. On the rolling plain, where the easily erodible rocks crop out, the drainage is well developed; the East Baines, the Humbert and the Wickham Rivers cut across this area. Laterite gives rise to smooth, slightly elevated surfaces.

TABLE I — SUMMARY OF STRATIGRAPHY

Photogeological Character	Symbol	Possible Geological Equivalent				
Variable tone, flat lying	Qa	Alluvium			QUATERNARY	CAINOZOIC
Variable tone, treeless, flat lying or gently undulating	Czb	Black residual soil and old alluvium				
Variable tone, flat lying or slightly inclined; materials at foot of slopes	Czs	Duricrust, travertine colluvium				
Dark toned, mesa-form, abundant vegetation	Czl	Laterite, red soil				
Medium toned, smooth surfaces without trace of bedding	Cz	Undifferentiated				
Medium toned, soft appearance	€mo	Nelson Shale	Negri Group	MIDDLE	CAMBRIAN	PALAEOZOIC
Light toned, bedded, with fine drainage network	€my	Headleys Limestone				
Medium to dark toned, smooth surface, forming characteristic terraces, very jointed	€la	Antrim Plateau Volcanics		LOWER		
Medium toned, thick bedded, hard appearance, high relief	Px2	Sandstones and conglomerates	Overlying Pua			PROTEROZOIC
Very similar to Px2, *but separated by scarp*	Px1	Sandstones and conglomerates				
		UNCONFORMITY				
Small outcrop similar to Puy, *distinction based on topographic position*	Puy1	Pinkerton Sandstone	Auvergne Group	UPPER		
Medium toned, well bedded, hard, smooth surface, scattered trees	Puy	Saddle Creek Formation				
Medium toned, soft appearance, bedding rarely visible	Pua	Angalarri Siltstone				
Medium toned, hard, rough surface deeply incised by drainage; strongly jointed; scattered trees	Puj	Jasper Gorge Sandstone				
Light toned, soft appearance, fairly abundant vegetation	Puc	Coolibah Formation				
		UNCONFORMITY				
Light to medium toned, generally soft appearance, thin bedded; dense drainage network; jointed, strongly in places; scanty vegetation	Pus	Skull Creek Limestone	Bullita Group			
Similar to Pus, *bedding slightly less visible*	Put	Timber Creek Formation				
Medium toned, hard appearance, scarp forming	P7	Bedded, fine grained sandstone				
Medium to dark toned, less resistant than P7	P6	Dolomite and quartz sandstone				
Medium toned, low relief	P	Undifferentiated				

To accompany Record 1969/63

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The western and southern parts of the sheet are characterized by a rough topography, which is related to the presence of cliff-forming clastic rocks overlapped by several flows of very fractured basaltic lavas.

Interesting examples of structure-to-land-form relationship occur in the northwest corner, where a straight water-course cuts along the axis of a narrow asymmetrical anticline (photos 1/5125 to 27); and in the southwestern corner, where centripetal drainage is developed on the flanks of a large syncline, only partly outcropping in the sheet, (photo 15/5028).

STRATIGRAPHY

PROTEROZOIC

Undifferentiated Proterozoic, P

Isolated outcrops showing traces of bedding and jointing and occupying a lower stratigraphic position than the Antrim Plateau Volcanics, but lacking a definite photogeological character, where mapped as Undifferentiated Proterozoic.

Units P_6 and P_7

These two units were differentiated from Put in the southeastern corner mainly by continuity with the Limbunya and Wave Hill sheets. On Waterloo, they are similar to each other and to the Timber Creek Formation, but are separated by scarps (photo 15/5160); perhaps the better defined is P_6, because of its darker tone and its minor resistance to erosion.

Probably in Waterloo P_6 and P_7 are nothing more than different levels in the Timber Creek Formation; however, for lack of certainty, they were not included in the Bullita Group.

THE BULLITA GROUP

Timber Creek Formation, Put

This is a light to medium toned unit, covered by scant vegetation. Generally it is thin bedded, with a soft appearance; the bedding is not strongly manifest, but in places the presence of some hard beds at different horizons and of at least one very light toned level helps in delineating structure (photo 11/5072).

Skull Creek Formations, Pus

On photographs, Pus appears very similar to Put, i.e. light to medium toned, thin bedded with soft appearance; but in Pus the bedding is better displayed than in Put (see for example photo 5/5074). The drainage is well developed and forms in places rounded interfluves. The vegetation is scarce, but some beds occur that seem to favour the establishment of a dense, dark vegetation. The unit is jointed, strongly in places.

The passage from Put to Pus is very gradual and extends over a strip a few miles wide; thus its representation by a line on the map is arbitrary.

In the field, sections were checked along the track Timber Creek - Bullita - Humbert River Station. Pus is formed by whitish or light brown, well bedded, finely grained, hard, calcareous dolomite, with lenticular chert in places. The passage to Put is gradual: beds of whitish, very finely grained, dolomitic sandstone and reddish to brown chert appear and their number progressively increases relative to the dolomite. Typical Put was not reached.

The stratigraphic relationship between Put and Pus is not clearly visible either on photos and on the checked sections. Laing and Allen (1956) state that the two formations are lateral equivalents.

In the northeastern corner of the sheet, Pus is overlain by the Coolibah Formation. Because of the lack of morphological detail and the complicated structural setting, it was impossible to draw a boundary between the two units. This area was left blank on the map.

THE AUVERGNE GROUP

The Auvergne Group unconformably overlies the units Put and Pus. The angular unconformity is clearly visible on the photographs (for example photo 5/5078). The Auvergne Group is formed by the following units:

Coolibah Formation, Puc

This is a light toned, soft unit covered by fairly abundant vegetation. It has a moderate thickness and thins out from north to south, disappearing south of the Humbert River and bringing Jasper Gorge Sandstone into unconformable contact with Pus.

The Coolibah Formation is constituted by thin bedded, purple and green siltstone with minor, thin bedded, whitish dolomite.

In the Waterloo area, the contact with the overlying unit Puj appears conformable; therefore in this work Puc was included in the Auvergne Group. However, in adjoining sheets, field parties found an unconformity between Puc and Puj and excluded the former from the

Auvergne Group. Probably this problem will be cleared up when Waterloo is mapped, during the next field season. On photos 6/5090 to 92, rocks having the photogeological characters of Puc and Puj appear to alternate twice; this feature was interpreted as an intertonguing contact, but the possibility of a thrust fault is to be considered; a field check is suggested.

Along a section on photo 4/5004 (point W 84, 2 miles north of the prinicipal point) a thin-bedded, fine grained, greenish sandstone was seen between Puc and Puj; it has very little thickness and does not appear distinguishable on air-photos. This horizon may be analogous to the Stokes Range Formation, mapped by the field party in Delemere and Victoria River Downs sheets.

Jasper Gorge Sandstone, Puj

This unit lies conformably on Puc (with the reservation mentioned above) and unconformably on Put and Pus where Puc is absent. On photographs it has very definite characters: it is medium toned, hard, with scattered vegetation; the surface is rough and deeply incised by a rare, fracture controlled drainage; the rock is generally strongly jointed and some joint sets show a surprising regularity. The outcrops tend to form mesas and flat-topped hills bounded by steep slopes (photos 5/5004 and 05).

A few sections were checked along the Bullita - Humbert River track. The rock is thick bedded, light brown, hard, fine to medium grained quartzose sandstone.

Angalarri Siltstone, Pua

Angalarri Siltstone is a medium toned, soft-appearing unit with bedding rarely visible (photos 1/5112 to 14), conformably overlying Puj.

The unit thins out from north to south and disappears at the latitude of Kildurk station, where overlying sediments of supposed glacial origin (Px_1) come directly into contact with Puj. It was not possible to determine whether the thickness decrease is due to sedimentation, or to erosion after sedimentation, before the depositon of Px_1.

In sections checked along the Auvergne - Ivahhoe highway and the Auvergne - Kildurk road, this unit is formed by thin bedded or laminated, dark grey, green or purple siltstone.

Saddle Creek Formation, Puy

On the north-western corner of the sheet, Pua is conformably overlain by Puy, a medium toned, well bedded unit with a smooth surface covered by scattered vegetation (photo 1/5126).

On the ground Puy is formed by ripple-marked, convolute-laminated, cross-bedded in places, medium to coarse grained quartzose sandstone. At the top, thin beds of green siltstone and dolomite are associated with the sandstone.

Pinkerton Sandstone, Puy_1

Only a small outcrop of this unit, which conformably overlies Puy, is present in the area. On photograph (1/5126) it appears very similar to Puy; a scarp separates the two units.

In the field the main difference observed was the quartz content, generally higher in Puy_1 than in Puy.

UNITS OVERLYING THE AUVERGNE GROUP (Px_1 and Px_2)

In the western half of the sheet, a complex formed by sandstone and conglomerates (units Px_1 and Px_2) succeeds in most places the upper units of the Auvergne Group, i.e. Puy_1, Puy and perhaps part of Pua. This fact was firstly observed by the field party at Skinner Point (Auvergne sheet), where Px_1 and Px_2 are partially of glacial origin. their deposition took place after the removal by erosion of the previous units.

On the airphotos, the levels established at Skinner Point were extrapolated through Waterloo sheet on the basis of morphological features. Px_1 and Px_2 have very similar photogeological characters (photo 1/5114): medium tone, thick bedding, hard appearance, high relief; the units are separated by a scarp.

During the field check, several sections were checked on these units; the uniform photogeological characters do not reflect the lithology and a gradual change was observed from north to south along the West Baines River valley.

In the north, near the sheet margin, Pua is overlain by a thick, cliff-forming bed of coarse grained conglomerate with boulders up to two feet across, most of them composed by quartzite, with glacial striae. The conglomerate is overlain by a sequence of coarse to very coarse, light grey micaceous and quartzitic sandstones alternating with conglomerates.

Southward, the conglomerates tend to thin out. At Kinevans Yard, eight miles west of Hurricane Hill, no conglomerate was seen, but abundant rounded pebbles and boulders are present in the scree at the foot of the cliff. The cliff at this point is formed by light grey, cross-bedded, medium to coarse grained, fractured quartzose sandstone in beds from one inch to several feet thick.

Four miles north of Kildurk, 50 to 70 feet of Pua are overlain by pinkish, medium to coarse grained quartzose sandstone with no traces of cross-bedding. Again, rounded pebbles are present in the scree.

To the west of Kildurk, where the Condon Creek cuts across the cliff, a similar sandstone crops out between Pua and the overlapping basalt, but no rounded pebbles were seen.

Facies changes were observed in these units also along the Auvergne - Ivanhoe highway. At Dingo Creek, 11 miles west of Newry Station, Px_1 is formed by pinkish and light grey, medium grained sandstone, very similar to that seen four miles north of Kildurk.

The isolated hill to the north of the highway, one mile west of Newry airstrip, is formed by thick bedded to massive conglomerate; the matrix is coarse quartzose sandstone; the pebbles are rounded, up to two feet across and composed mainly by pink and green quartzite and chert. At the base of the hill Pua crops out.

Between Newry airstrip and Newry Station, pink, medium grained quartzose sandstone overlies Pua and is overlapped by basalt. No trace of conglomerate was seen.

The area to the east of Newry was checked from the highway and from two new tracks which, starting from the highway at 3.5 and at 14 miles from Newry Station, lead to the south. Pink and light brown, thick bedded, medium to coarse grained quartzose sandstone with, in places, traces of cross-bedding overlies Pua in this area. No conglomerate was seen, but rounded pebbles and boulders composed of pink and green chert and quartzite, more rarely of crystalline rocks and ophiolites, are commonly present in Cz, Czs and in the scree.

The photogeological map, which is based on morphological units, does not reflect this facies change. Different units will probably be mapped by the field party.

PALAEOZOIC

Antrim Plateau Volcanics, Cla

A thick sequence of basaltic flows unconformably lies on the Proterozoic rocks in the western and southern parts of the sheet. Several near-horizontal flows in vertical succession form terraces separated by scarps. The surfaces are medium to dark toned and smooth; the rock is commonly very jointed.

Sections were checked along the Kildurk - Rosewood - Waterloo - Limbunya road. Vesicular basalt was found expecially in the lower part and compact or agglomeratic basalt in the upper part of the outcrops. Among the debris, fractured crystals of quartz (rock crystal, smoky and pink quartz, amethyst) of no commercial value were found.

The Negri Group

Only the two lower members of the Negri Group crop out in Waterloo, apparently conformably overlying the Antrim Plateau Volcanics (photo 15/5126).

The Headleys Limestone (Cmy) is a light toned, bedded unit with a well developed drainage network, which is deniritic in detail, but centripetal as a whole, because of structural control.

Cmy is conformably overlain by the Nelson Shale (Cmo), which is medium toned, soft and smooth.

No field check was made in the Waterloo area; in the adjoining Limbunya sheet, Cmy is a thick bedded, white and light brown, very fine to fine grained calcarenite with small lenses of yellow dolomite and chert, vesicular where eroded. Cmo is described by Traves (1955) as a succession of shale, limestone and mudstone; along the sections checked it is commonly concealed by soil and only the harder rock type crops out.

CAINOZOIC

Undifferentiated Cainozoic, Cz

This unit includes several medium toned patches differentiated from the underlying rock because of their smooth appearance and the lack of bedding. They are composed mainly by soil, sand and gravel.

Laterite, Czl

A dark toned, high plateau, in most places bordered by a steep scarp, caps proterozoic rocks in the eastern part of the sheet. The drainage is poorly developed and scattered; the vegetation is abundant. It is mapped as laterite by continuity with the adjoining sheets, but no field check was done in Waterloo. In Limbunya, typical pisolitic laterite was seen only along the lateral scaprs or in creek banks, the surface being covered by red soil.

Unit Czs

Flat lying or slightly inclined surfaces with variable grey tone were mapped as Czs. The unit includes duricrust, travertine and colluvium.

Unit Czb

This unit has a photographic tone variable from very light to medium grey, and appears treeless, flat lying or gently undulating. It includes black residual soil and old alluvium.

Alluvium, Qa

Alluvium is widely developed along many watercourses particularly along the West Baines River. On account of the map scale, minor deposits of colluvium were either included in the alluvium or ignored.

STRUCTURE

The general structural trend of the Proterozoic rocks is north-northeast, the oldest units outcropping in the southeast corner and the youngest units in the northwest corner of the sheet. In detail, folds and faults make the structural setting rather complicated.

Several folds with axes trending roughly east-west occur in Put, in a narrow belt near the Wickham River. In Pus the dominant trends of folds are northeast and northwest.

The unit Puj shows a marked tendency to fracture. A dense network of lineaments and joints is characteristic of this unit on airphotos; in places, two or three sets of straight, parallel joints intersect each other and form regular, geometric patterns.

In the northeastern part of the sheet, Puj and older formations are strongly faulted and folded. Faults intersecting each other separate folded blocks; in places, it was possible to determine from airphotos the directions of vertical relative movement, as shown on the map.

A prominent structural feature is present in the northwestern corner of the sheet, where Angalarri Siltstone and younger formations are folded into an asymmetrical anticline with axis trending northeast. The northern flank is formed by medium to gently dipping beds of the Auvergne Group (Pua, Puy and Puy_1); on the southern, steeply dipping flank, only a thin remnant of Pua crops out, the rest of the sequence being substituted by Px_1 and Px_2.

The folding of the Proterozoic units should have taken place before the deposition of the Antrim Plateau Volcanics.

The Antrim Plateau Volcanics are sub-horizontal and intensely fractured. A curvilinear fault bounds this unit in the northeast; the vertical movement, which has lifted Px_1 and Px_2 relatively to Cla, must be considerable. A row of lineaments and minor faults is aligned with this fault in a roughly south direction and may represent the same structural feature..

In the southwestern corner of the sheet, members of the Negri Group are folded into a wide syncline, the main part of which extends to Limbunya and Dixon Range sheets; a dip fault, with possible oblique slip, brings the Headleys Limestone level with the Nelson Shale.

Linear features of considerable length, which on airphotos do not show clear evidence of displacement along their sides, were all mapped as lineaments; in the field, some of them may be found to be faults.

CONCLUSIONS

The close relationship between morphology and geology and the scarcity of vegetation cover, as well as the brief field check, make the author confident that the photo-interpretation is reasonably reliable.

The main problems still existing are:

1- The relationship of units P_6 and P_7 to the Timber Creek Formation.

2- The boundary between Timber Creek Formation and Skull Creek Limestone.

3- The boundary between Skull Creek Limestone and Coolibah Formation in the northeast corner.

4- The relationship of Coolibah Formation to Jasper Gorge Sandstone, on account of the possible intertonguing contact on photos 6/5090 to 92.

5- The nature and lateral changes of units Px_1 and Px_2.

REFERENCES

DOW, D.B., GEMUTS, J., PLUMB, K.A. and DUNNET, T.D. 1964 - The geology of the Ord River Region, W.A., Bur. Miner. Resour. Aust. Rec. 1964/104.

LAING, A.C.M. and ALLEN, R.J. 1956 - Geolgoy of Victoria River area, Associated Freney Oil Fields N.L. Permit No.1, Northern Territory, Mines Administration Pty. Ltd. Report No. NT/VR/22 (unpubl.).

MAFFI, C. (1968) - Report on photo-interpretation of the Limbunya 1:250,000 scale sheet, N.T., Bur. Miner. Resour. Aust. Rec. 1968/28.

PERRY, W.J. (1966) - Photo-interpretation of Wave Hill, Victoria River Downs and Delamere, N.T., Bur. Miner. Resour. Aust. Rec. 1966/159.

PERRY, W.J. (1967) - Photo-interpretation of Auvergne 1:250,000 scale sheet, N.T., Bur. Miner. Resour. Aust. Rec. 1967/76.

PERRY, W.J. (1967) - Notes on a field trip to Delamere, Victoria River Downs and Wave Hill 1:250,000 scale sheet areas, N.T., Bur. Miner. Resour. Aust. Rec. 1967/96.

TRAVES, A.C.M. (1955) - The geology of the Ord-Victoria region, N.T., Bur. Miner. Resour. Aust. Bull. 27.

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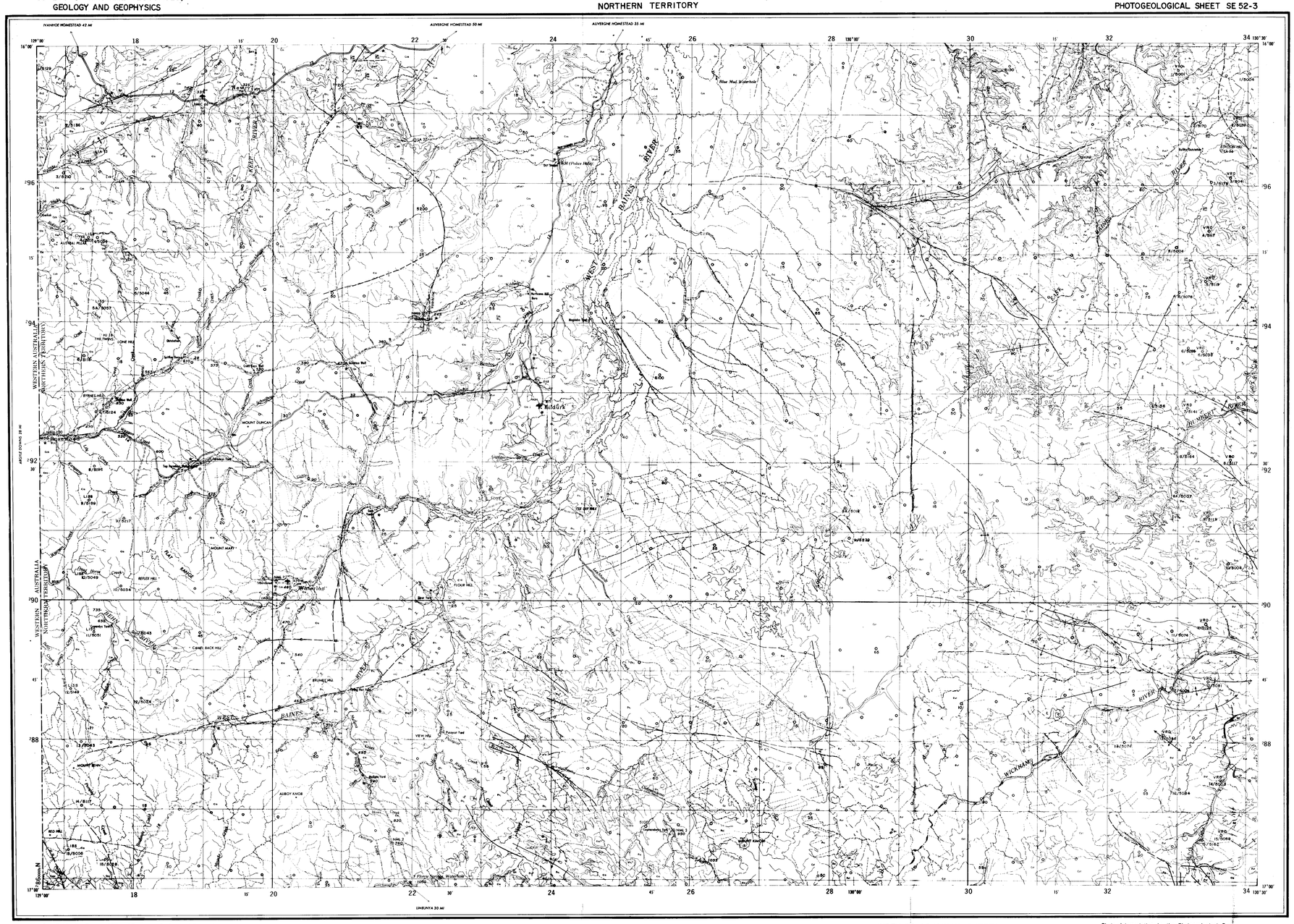
GEOLOGY AND GEOPHYSICS

WATERLOO
NORTHERN TERRITORY

AUSTRALIA 1:250,000
PHOTOGEOLOGICAL SHEET SE 52-3



Compiled by the Bureau of Mineral Resources, Geology and Geophysics.
Detail adjusted to photoscale 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.

SCALE 1:250,000

5 0 5 10 15 MILES

5 0 5 10 15 20 25 KILOMETRES

INDEX TO ADJOINING SHEETS

CAMBRIDGE GULF	AUVERGNE	DELEMERE
LISSADELL	WATERLOO	VICTORIA RIVER DOWNS
DIXON RANGE	LIMBUNYA	WAVE HILL

Photo-interpretation by the Photogeological Group,
Bureau of Mineral Resources, Geology and Geophysics 1968
Interpreted by: C.E. MAFFI

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Medium to dark toned, less resistant than E7	E6	Dolomite and quartz sandstone			
Medium toned, low relief	E	Undifferentiated			

- *Lithological boundary*
- *Probable lithological boundary*
- *Anticlinal axis*
- *Synclinal axis*
- *Fault, showing relative vertical movement*
- *Probable fault*
- *Lineament*
- *Edge of bed*
- *Probable edge of bed*

Estimated dips

- *Horizontal*
- *Very low (<3°)*
- *Low (3°–10°)*
- *Medium (10°–45°)*
- *Steep (>45°)*
- *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*
- *Yard*
- *Windpump*
- *Airport or Airfield, Landing ground*
- *Bore*
- *Tank*
- *Well*
- *Spring*
- *Waterhole*
- *Dam*
- *Photo-centre points*
- *Photo-centre points - adjoining sheet*

WATERLOO
SE52/52 NORTHERN TERRITORY