COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS.

RECORDS:

1963/131

GEOCHEMICAL AND RADIOMETRIC SURVEY, RUM JUNGLE, NORTHERN TERRITORY, 1962.

by

Bryan P.Ruxton and John W.Shields.

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Records 1963/131

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GEOCHEMICAL AND RADIOMETRIC SURVEY, RUM JUNGLE, Northern Territory, 1962.

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SUMMARY

Between mid-July and early November, 1962, 1,030 auger holes were drilled for a total footage of 40,000 feet on square grid patterns at Rum Jungle as a continuation of the radiometric and geochemical survey commenced in 1961. The object was to delimit radiometric and base metal anomalies in weathered bedrock as a guide to possible future diamond drilling for uranium and base metals.

Each auger hole was tested for radioactivity by probing. Samples taken of bulk soil and bulk weathered rock were forwarded to Canberra for spectrographic analysis for Cu, Pb, Ni, Co, Va, Mo, Sn, Be and P. Contour plans were then prepared showing the distribution of radioactivity, copper, and lead, at the surface, in the soil, and in the weathered bedrock.

27,000 feet of this auger drilling in the general "55" area revealed three significant radiometric anomalies in weathered bedrock. A .12 mR/Hr anomaly was recorded at 68 feet depth at 4.6N 258W (5SW.W grid) where further deep auger drilling and scout diamond drilling is warranted. Anomalies of .10 mR/Hr average value were recorded at 26S 8 W and 10S 10W, Area 55. The centres of both these anomalies are displaced towards or into the shale compared with the surface maxima (.05 mR/Hr) which overlie actinolite and chlorite schist.

The general structure of the Area 55 prospect is an oval basin elongated north-east and cut off to the north by an intense shear zone along grid line 16W. The structural and anomaly pattern is broadly similar to that at Rum Jungle Creek South (Daly and Rowston, 1962). Diamond drilling is recommended to test the Turam anomaly in the centre of the prospect.

13,000 feet of auger drilling on the south-western side of Castlemaine Hill linking up Rum Jungle Creek South Castlemaine, and Batchelor Laterites revealed only one small (.16mR/Hr) radiometric anomaly in weathered shale at 51E 8N (Rum Jungle Creek South Extended). This anomaly is scheduled to be diamond drilled by Territory Enterprises Pty., Ltd.

Auger drilling of Batchelor Laterites Extended by the Rum Jungle Phosphate Party (Pritchard, et.al. 1963) revealed a small intense anomaly (.20 mR/Hr) at 144E 2N in weathered carbonate rock adjacent to an east-trending shear zone and just north of an anticlinal dragfold of grey shale. Diamond drilling of this dragfold is recommended. A major electromagnetic Turam anomaly (ratios up to 1.35) occurs 800 feet east of the radiometric anomaly at about 154E 4N and warrants diamond drilling. Apart from these recommendations any further diamond drilling of the "conducting horizon" around Castlemaine Hill is not warranted.

The only large area with high chemical values occurs at the north-east end of Area 55 where copper and lead values of over 5000 p.p.m. were found north of an east-trending fault which passes through 8S 8W. Follow-up auger drilling and scout diamond drilling is recommended.

INTRODUCTION

The geochemical and radiometric surveys commenced at Rum Jungle in 1961 (Ruxton and Shields, 1963) were continued on a larger scale in 1962.

In 1961 auger drilling had been carried out on the south-western side of Castlemaine Hill at three separate radiometric anomalies: Rum Jungle Creek South, Castlemaine, and Batchelor Laterites. An electromagnetic survey carried out by the Geophysical Branch in 1961 (Daly, 1962) revealed a conducting horizon connecting these three areas and so the intervening ground was auger drilled in 1962 (Plate 1). 350 auger holes were drilled for a total footage of about 13,000 feet.

A shear zone is suspected to trend north-eastwards connecting Area 55 with Browns parallel to and north-west of the Giants Reef Fault (Plate 1). Two radiometric anomalies near this shear zone had been auger-drilled in 1961. In 1962 this shear zone was auger-drilled from near Dolerite Ridge to Area 55 and drilling was continued to fill in the gap between Area 55 and Area 55 West. Some drilling was also carried out to the west of Finniss River (Area 55W.West). Altogether in this general "55 Area" 680 auger holes were bored for a total footage of about 27,000 feet.

Field work began on 26th April, 1962, using auger drills hired on contract from Enterprise Exploration Pty.Ltd. The contract specification of 40,000 feet was completed on 7th November and the party disbanded on 27th November, 1962. The interpretation and presentation of results was carried out by B.P. Ruxton and J.W. Shields between December 1962 and April 1963.

Survey Method

Baselines and traverses in the form of rectilinear grids were surveyed and pegged over the areas to be drilled by Geophysicists of the Darwin Uranium Group. Auger holes were drilled initially 40 feet deep at the corners of 200 foot squares. Where considered necessary follow-up work was carried out on a 100 x 100 foot grid and some holes were deepened to 100 feet depth.

Each auger hole was probed for radioactivity using probes made up by the Geophysical Branch of the Bureau of Mineral Resources with G24H tubes and modified ratemeters, type Harwell 1368A. Readings were taken every foot until high values occurred when the interval was halved or quartered. Whereas in 1961 only about 75 percent of the total depth drilled was probed in 1962 this was raised to 90 percent.

As drilling progressed cuttings were collected every two feet and laid out on the ground in a row. When the rods were withdrawn at the completion of each hole cuttings were also collected from the bit. Samples were taken at 2-4 feet and then every 6 feet, i.e. 4-10, 10-16, 16-22, 22-28, 28-34, 34-40 feet, and from the base of the hole (the bit sample).

Each sample of about 250 gms was placed in a plastic bag (6 x 9 inches) with a labelled aluminium tag. Labels were made self-explanatory - e.g. RJC/16W/4S/28-34 refers to a sample from 28-34 feet at 16W 4S on Rum Jungle Creek grid. At the same time two bulked samples were taken; one of the soil and one of the weathered rock. These bulk samples were despatched immediately by air freight to Canberra where they were analysed for Cu, Pb, Ni, Co, Va, Mo, Sn, Be, and P , with optical spectrograph. When high values of any of these elements were obtained the detailed samples were then examined.

As the drilling proceeded plans were compiled in the field on an appropriate scale (normally 200 feet to 1 inch), showing geology, topography, radiometric, and geochemical contours of the surface, soil, weathered rock. Any electromagnetic anomalies were also shown. Transparent paper was used so that comparisons could be made between any combinations of the attributes. These plots were kept up to date from day to day so that follow-up work on the radiometric probe results could be done immediately in the most effective manner.

THE GENERAL "55" AREA

General Geology

The stratigraphic succession in decreasing order of age is:

(iii)	SHALE, Carbonaceous, chloritic and pyritic; including bands of greywacke.	GOLDEN DYKE FORMATION
(ii)	AMPHIBOLITE AND CHLORITE SCHIST usually weathered to a kaolinitic sericitic silt.	
(i)	DOLOMITE, calcareous and dolomitic shale and talc-tremolite schist.	COOMALIE DOLOMITE

The geological map (Plate 2) has been compiled from surface mapping of outcrop and rubble and from lithological interpretation of the auger cuttings. Amphibolite and chlorite schist only outcrop on Area 55 and Area 55B; but "calcareous amphibolite has been logged by T.E.P. in diamond drill cores from Area 55W and recorded in deep auger holes at Area 55 W.West. In Areas 55A and 55W a band of black shale occurs in the "dolomite" and a band of tremolite schist occurs in the shale.

Between Areas 55W/West and 55West dolomite/shale contact strikes north-east and almost coincides with the Finniss River. In Areas 55W and 55A the shape of the dolomite/shale contact suggests gentle anticlines and synclines plunging north-east. A strong north-east trending shear zone (along grid line 16W) separates Area 55 from Area 55A.

The shape of the dolomite/amphibolite/shale contacts at Area 55 suggests gentle folds plunging north-west and west.

However, the shale is tightly folded with fold axes plunging steeply north-north-west. Mullion and rodding structures occur in the noses of the folds.

The fault pattern on Area 55 is largely inferred but one established east-trending fault passes through 8S 8W and here the amphibolite/shale contact is offset 400 feet to the west on the north side of the fault. The highest lead values (Plate 6) occur immediately north of this fault, and the highest radiometric values found in weathered rock in the present survey also occur immediately north of this fault (Plates 3 and 4).

Radiometric Results

Area 55W. West

Area 55W. West is situated on the north-west side of the Finniss River west of Area 55 W. No surface radiometric survey has yet been carried out.

Near the Finniss River the alluvium is thicker than 30 feet in many places and the upper part of the weathered rock is intensely leached. Maximum radiometric values in the weathered rock give a better picture of the anomalies than averaged values (Plates 3 and 4).

The 048 mR/Hr radiometric contour appears to cross beneath the Finniss River from Area 55W. On the bank of the river at 4.6N 258 W (1958 geochemical grid). 120 mR/Hr was recorded at 68 feet depth. The .048 mR/Hr contour in weathered rock also outlines three auger holes adjacent to the surface lead mineral occurrence near 16N 253W.

Recommendations

Scout diamond drilling is warranted near 21S 60W on the 55W grid and near 5N 258W on the 55W.West grid.

Further auger drilling is recommended along both banks of the Finniss River south-west of the present grids to follow the dolomite/shale contact beneath the thick alluvial cover up to the north-trending "Mount Fitch" fault some 2000 feet away (Rum Jungle, 1 inch to a mile, Special Sheet). About half of these auger holes should be 60 to 80 feet in depth to penetrate the thick alluvium and the upper intensely leached portion of the weathered rock.

Surface radiometric and Slingram electro-magnetic surveys should also be carried out over this area.

Area 55A

Area 55A is the area between Area 55 and Area 55W. A number of low order (.025 mR/Hr) surface radiometric anomalies occur on and near the contact between dolomite and shale.

Only two auger holes showed an average radiometric value of greater than.048 mR/Hr in weathered rock. One of these at 36S 16W adjoins Area 55; the other at 18S 26W occurs on the dolomite/shale contact on the nose of an anticline.

Recommendations: Follow-up auger drilling should be carried out on a 100 x 100 ft. grid around 18S 26W.

Area 55

The .025 mR/Hr surface radiometric contour outlines a large part of the Area 55 Prospect. High contours (e.g. .05 mR/Hr, Plate 3) are confined inside the outcrop areas of amphibolite and chlorite schist.

The anomalies outlined by the .024 mR/Hr contour in weathered rock almost encircle the Area 55 Prospect. The .048 mR/Hr contour outlines two areas in weathered rock at each end of the prospect, one centred on 26S 8W where .16mR/Hr was recorded, and one centred on 10S 10W where .21 mR/Hr was recorded. Compared with the surface radiometric anomalies the anomalies in the weathered rock are displaced towards or into the shale sequence.

Recommendations: The costeaning and churn drilling carried out by T.E.P. at Area 55 has been concentrated at the sites of the most intense surface radiometric anomalies in the "amphibolite and chlorite schist" and dolomite. There has been no testing of the base of the shale sequence where the recent subsurface anomalies have been found.

Scout diamond drilling is therefore warranted to test the base of the shale sequence near the anomalies at 26S 8W, and 10S 10W, and the Turam anomaly (Douglas, 1962) in the centre of the prospect.

It is also recommended that a further 100 auger holes be drilled on a 100 x 100 ft. grid to delimit the .048 mR/Hr contour more accurately in the weathered rock.

Area 55B

Area 55B lies to the north-east of Area 55 and in 1962 auger drilling was carried out on grid lines 00 to 28N across Rum Jungle Creek.

A small circular shaped surface radiometric anomaly (.025 mR/Hr) is centred on 12N 18W, but in the weathered rock only one auger hole (at 12N 16W) averaged above .024 mR/Hr.

Recommendations: No further testing for uranium is warranted on Area 55B.

Chemical Results

The copper and lead anomalies in weathered rock correspond closely in position and general shape with the surface anomalies outlined in the 1958 geochemical survey (Plates 5 and 6, Haldane and Debnam 1959).

Area 55W. West

The two high lead values (480 p.p.m.) in soil at 256W, 14N and 18N, are represented upslope in the weathered shale at 253 W 16N (1920 p.p.m.) and 254W 12N (960 p.p.m.) Near 253W 16N a line of quartzose boulders trends north-east and a composite sample from three of them gave 17% lead as pyromorphite on analysis. No copper anomalies occur in this area.

Recommendations: The lead occurrence and the lead anomalies are too small to be of economic interest and no further drilling is warranted.

Area 55A

Two small copper anomalies in weathered rock occur on the axes of the folds at the dolomite/shale contact at 35S 32W (800 p.p.m.) and 20S 28W (1600 p.p.m.). The surface lead anomaly (240 p.p.m.) around 6S 20W forms part of the large lead anomaly on Area 55 and will be discussed below.

Recommendations; No further drilling is warranted for base metals at Area 55A.

Area 55

The large intense surface and subsurface lead anomaly occurs adjacent to and to the north of the east-trending fault passing through 8S 8W. The 3840 p.p.m. contour extends from 10S 14W to 6S 8W. The large intense copper anomaly, however, spreads across the fault zone south-eastwards to 25S. There are five centres of high copper values in weathered rock; two north of the fault, 5000+ p.p.m. at 11W 7S and 12W 4S; one adjacent to the fault, 5000+ p.p.m. at 5W 8S; and two to the south of the fault 1600 p.p.m. at 2W 12S and 4W 16S. Further auger drilling is, however, necessary to delimit these high anomaly centres more accurately.

Most of the anomalous copper and lead occurs in the weathered actinolite and chlorite schist, between the shale and carbonate rocks.

Recommendations: After follow-up auger drilling has been carried out diamond drilling is warranted to test the intense copper anomalies in weathered rock.

Area 55B

The intense copper and lead anomalies in Area 55 do not continue into Area 55B. However, a high spot anomaly of copper and lead, both over 5000 p.p.m., at 8N 12W in weathered rock occurs at the contact of the shale and carbonate rock.

Recommendations: Follow-up auger drilling on a 100 x 100 foot grid is recommended around 8N 12W.

CASTLEMAINE HILL AREA

General Geology

The stratigraphic succession around Castlemaine Hill is believed to be as follows (oldest at base):

HEMATITIC QUARTZ BRECCIA	Age unknown
AMPHIBOLITE AND CHLORITE SCHIST	
CHLORITIC AND CARBONACEOUS PYRITIC SHALE	GOLDEN DYKE FORMATION
DOLOMITIC AND CALCAREOUS SHALE	COOMALIE DOLOMITE

The Golden Dyke Formation and the Coomalie Dolomite are of Lower Proterozoic age.

The general structure of Castlemaine Hill is a northwest trending anticlinorium cut by several east-northeast trending cross-faults. Amphibolite forms the core of the complementary synclinoria on either side of Castlemaine Hill. There is considerable shearing due to bedding plane slip and axial plane slip and this is most intense in the shale near its contact with carbonate rock. Much of the dolomitic and calcareous shale have been recrystallised to talcose tremolitic schist and coarse dolomite marble.

The "conducting horizon" (Plate 7: and Daly, 1962) around Castlemaine Hill represents the zone of most intense shearing in the chloritic grey shale where it is converted into a pyritic chloritic schist. Adjacent to the carbonate rock the carbonaceous shale is commonly sheared to a graphitic schist and this gives rise to secondary electromagnetic anomalies.

The hematitic quartz breccia may be a replacement of the dolomite. Its character and relationships are being described in detail by the Rum Jungle Phosphate Party (Pritchard et al., 1963).

Radiometric Results (Plate 8)

Rum Jungle Creek South Extended

A radiometric anomaly in weathered shale outlined by the .024 and .048 mR/Hr contours was delineated on the north-eastern edge of the grid between 46E and 54E 300 feet, upslope from the small surface radiometric anomaly (.025 mR/Hr). The maximum average radiometric value (.042 mR/Hr) and the maximum individual value in weathered rock (.085 mR/Hr) occur at 51E 8 N.

Recommendations: This anomaly in weathered rock provides a promising target for uranium search and T.E.P. propose to diamond drill along grid line 50E.

Castlemaine North

A small radiometric anomaly outlined by the .024mR/Hr contour occurs in weathered calcareous beds between 83E 8N and 94E 7N. This is an extension of the anomaly outlined at Castlemaine in the 1961 survey (Ruxton and Shields, 1963) which was diamond drilled and found to be barren with respect to uranium. The anomaly at Castlemaine North is therefore not considered significant.

Castlemaine South

A long rectilinear low-order radiometric anomaly (.024 mR/Hr) in weathered rock trends northwest along the contact between shale and carbonate rock from 136E 6N to 00 130E. An average value of .054 mR/Hr was recorded in weathered dolomitic shale at 6S 136E and the .024 mR/Hr contour outlines a small area adjacent to an east trending shear zone. Farther east along this shear zone auger holes drilled by Rum Jungle Phosphate Party revealed another small area of anomalous radioactivity around 144E 2N. Here surface radioactivity of only .025 mR/Hr increases to .20 mR/Hr at 3 feet depth and averages about .15 mR/Hr in weathered dolomitic shale to 26 feet depth. This anomaly occurs on the nose of a dragfold anticline near the contact of shale and carbonate rock.

Recommendations: Diamond drilling of the shales in the anticlinal dragfold near 144E 00 is warranted.

Chemical Results (Plate 9)

Castlemaine North

A long rectilinear (2600 ft x 300 ft) southeast-trending copper anomaly (400 - 800 p.p.m.) occurs in weathered shale from 80E 4N to 104E 4N, and a small lead anomaly (960 p.p.m) is centred on 92E 00. The southeastern portion of the Upper anomaly is on Castlemaine (Ruxton and Shields 1963) and diamond drilling of it by T.E.P. in 1961-2 revealed only traces of chalcopyrite and galena in the bedrock. No further drilling for base metals is warranted.

Castlemaine South

Small copper (800 p.p.m.) and lead (960 p.p.m.) anomalies were found in weathered shale 300 feet south of the east-trending shear zone near 132E 14S. They are too small to be of importance for base metal search.

GENERAL RECOMMENDATIONS

Only two localities now seem promising for further uranium search in the area sampled.

(i) The intense Turam anomaly at Batchelor Laterites Extended. This is very similar to the anomaly at Rum Jungle Creek South.

(ii) The weak Turam anomaly at the centre of Area 55. These require testing by deep auger drilling and diamond drilling.

These require testing by deep auger drilling and diamond drilling.

Grid diamond drilling of the conducting horizon around Castlemaine Hill is not warranted and should be discontinued.

Search for base metals has been generally disappointing. The soils in the Rum Jungle area are mostly sedimentary and retain a large proportion of the trace elements from the parent rock. High surface metal anomalies merely reflect a high content in parts per million in bedrock; and not necessarily economic concentrations. However the surface copper anomaly at Mount Finch of over 2000 p.p.m. over an area of 2000 x 300 feet should be auger drilled in detail as it is the largest and most intense surface anomaly known in the Rum Jungle District.

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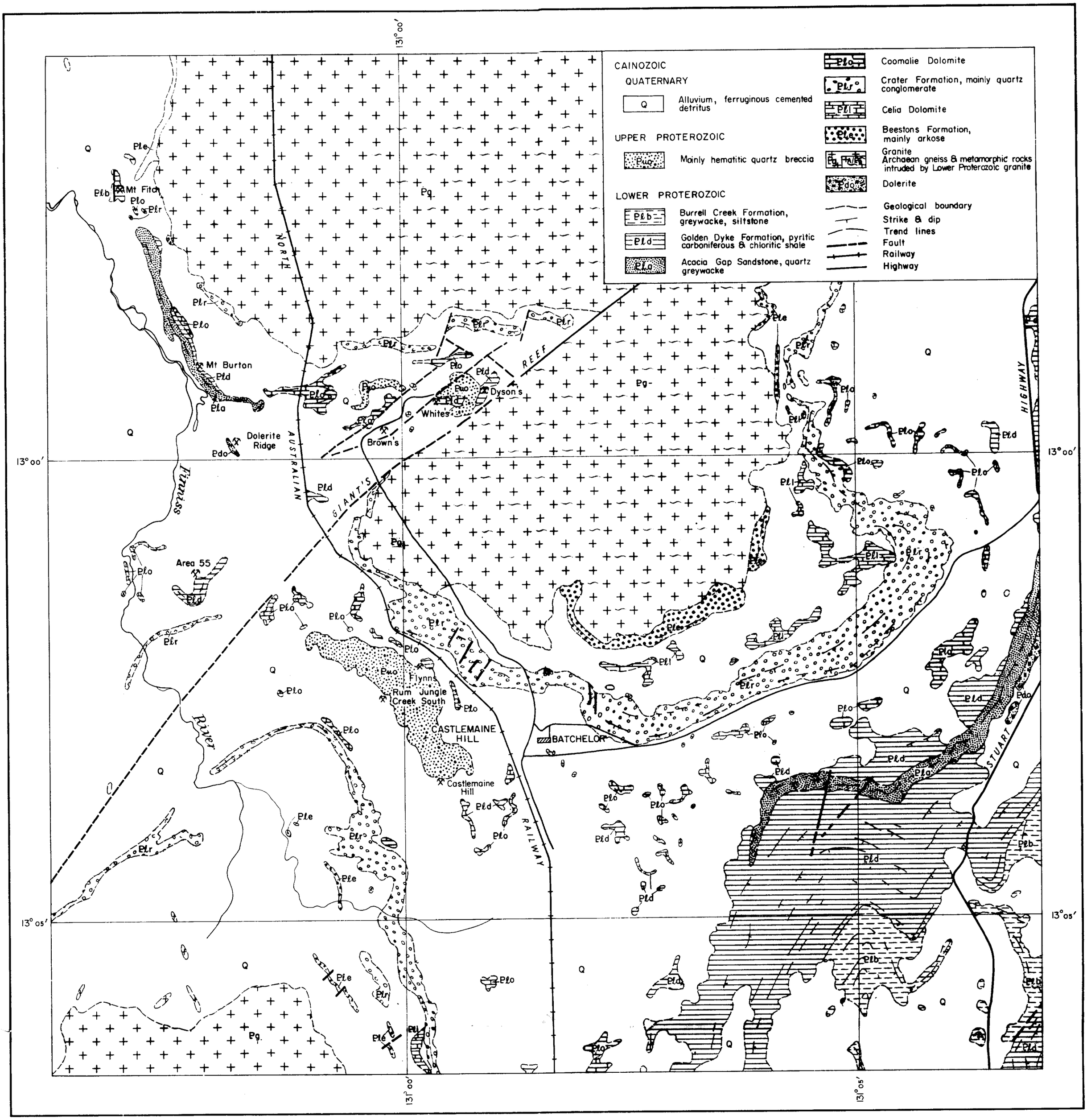
RUXTON, B.P., & SHIELDS, J.W., 1963 - Geochemical and Radiometric Survey, Rum Jungle, Northern Territory 1962. Bur.Min.Resour. Aust.Rec. 1963/ (unpubl.).

FIG. 1



RUM JUNGLE AREA, N. T.

GEOLOGY

AFTER BMR 1-MILE SPECIAL SHEET, 1960

SCALE IN MILES

0 1 2 3 4

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

To accompany Record No 1963/131

D 52/8/62

JULY 1963

RUM JUNGLE GEOCHEMICAL SURVEY 1961-62
AREA 55 TO BROWN'S

Geology, Topographic Contours and Electromagnetic Anomaly Axes

800 0 800 1600 2400 FEET

WEST FINNISS

WEST FINNISS RIVER

DOLERITE RIDGE

DOLERITE RIDGE EAST

North Australian Railway

1956 Geophysical and 1958 Geochemical Baseline

BROWN'S WEST

AREA 55 W/ WEST

Rum Jungle Creek

AREA 55 B

AREA 55 WEST

AREA 55

AREA 55 A

LAGOON

20N Baseline

10N Geophysical

N

Reference

- Dolerite
- Greywacke
- Chloritic and carbonaceous shale
- Amphibolite and chlorite schist
- Dolomite and calcareous shale
- Strike of bedding, dip indicated
- Geological boundary, position approximate
- Fault, position approximate
- Fault, position inferred
- 230 Topographic contours at intervals of 5 feet based on mean sea level, Darwin
- Axes of electromagnetic anomalies

Bureau of Mineral Resources, Geology and Geophysics June 1963

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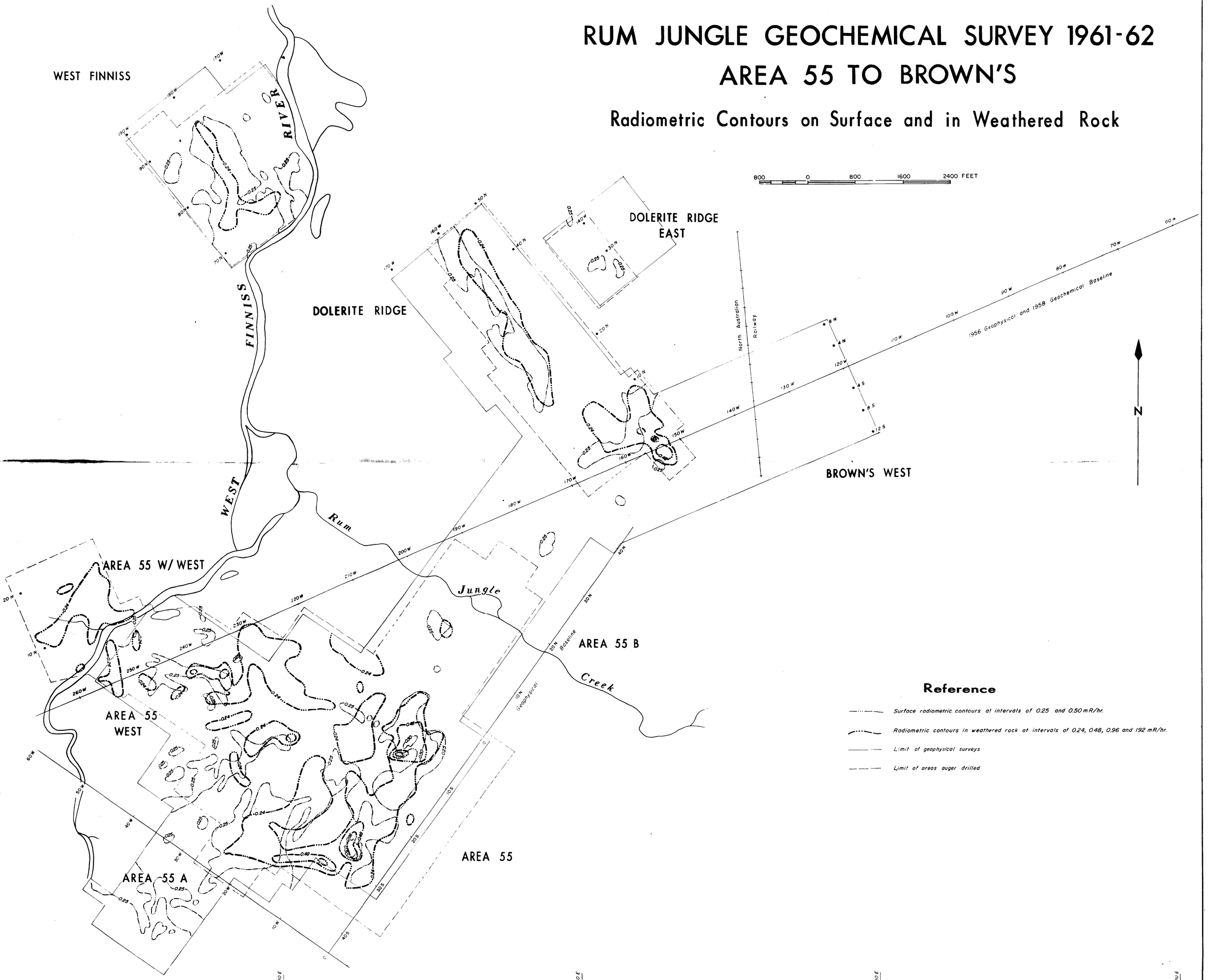
RUM JUNGLE GEOCHEMICAL SURVEY 1961-62
AREA 55 TO BROWN'S

Radiometric Contours on Surface and in Weathered Rock



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RUM JUNGLE GEOCHEMICAL SURVEY 1961-62
AREA 55 TO BROWN'S

Surface Radiometric Contours and Radiometric Contours in Weathered Rock Based on Maximum Values

800 0 800 1600 2400 FEET

WEST FINNISS

DOLERITE RIDGE

DOLERITE RIDGE EAST

BROWN'S WEST

AREA 55 W/ WEST

AREA 55 WEST

AREA 55

AREA 55 A

AREA 55 B

FINNISS RIVER

WEST Rum Creek

Jungle Creek

North Australian Railway

1956 Geophysical and 1958 Geochemical Baseline

30N Baseline

10N Geophysical

N

Reference

- 025 — Surface radiometric contours at intervals of ·025 and ·050 mR/Hr
- 024 — Radiometric contours in weathered rock at intervals of ·024, ·048 and ·096 mR/Hr based on maximum values.
- Limit of geophysical survey
- Limit of areas auger drilled

15000 E 20000 E 25000 E 30000 E

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RUM JUNGLE GEOCHEMICAL SURVEY 1961-62
AREA 55 TO BROWN'S

Copper Contours on Surface and in Weathered Rock

800 0 800 1600 2400 FEET

WEST FINNISS

DOLERITE RIDGE

DOLERITE RIDGE EAST

FINNISS RIVER

WEST Rum Jungle Creek

North Australian Railway

1956 Geophysical and 1958 Geochemical Baseline

Geophysical Baseline

BROWN'S WEST

AREA 55 W/ WEST

AREA 55 WEST

AREA 55 B

AREA 55

AREA 55 A

N

Reference

- 200 — Surface copper contours at intervals of 200, 400 and 800 p.p.m. Based on samples at 2 feet depth on 400 x 200 feet centres (from 1958 Geochemical Survey).
- 200 — Copper contours in weathered rock at intervals of 200, 400, 800, 1600 and 3200 p.p.m.
- Limit area sampled at 2 feet depth
- Limit of areas auger drilled

NOTE : Spectrographic results for copper and lead are available only for the general "55" area

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RUM JUNGLE GEOCHEMICAL SURVEY 1961-62
AREA 55 TO BROWN'S

Lead Contours in Soil and Weathered Rock

800 0 800 1600 2400 FEET

WEST FINNISS

FINNISS RIVER

DOLERITE RIDGE

DOLERITE RIDGE EAST

WEST Rum Jungle Creek

AREA 55 W/ WEST

AREA 55 WEST

AREA 55 B

AREA 55

AREA 55 A

BROWN'S WEST

N

Reference

- Surface lead contours at intervals of 120, 240, 480, 960, 1920 and 3840 p.p.m. (From geochemical survey 1958)
- Limit of surface geochemical survey
- Lead contours in weathered rock at intervals of 120, 240, 480, 960, 1920 and 3840 ppm.
- Limits of areas auger drilled

Note: Spectrographic results for copper and lead are available only for the General "55" Area

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PLATE 6

GEOCHEMICAL SURVEY IN THE RUM JUNGLE AREA N.T. 1962

RUM JUNGLE CREEK CASTLEMAINE HILL FLYNNS AREA

Geology , Topographic Contours and Electromagnetic Anomaly Axes

FLYNNS

RUM JUNGLE CREEK SOUTH

Open Cut Orebody

RUM JUNGLE CK SOUTH EXTENDED

CASTLEMAINE NORTH EXTENDED

CASTLEMAINE NORTH

CASTLEMAINE

CASTLEMAINE SOUTH

BATCHELOR LATERITES

800 0 800 1600 2400 FEET

N

Reference

- Hematitic quartz breccia
- Amphibolite
- Chloritic grey shale
- Greywacke
- Talc-sericite schist
- Carbonate rock
- Lithological boundaries, position approximate
- Fault, position approximate
- Fault, inferred
- Shear zone
- Major axes of electromagnetic anomaly
- Topographic contours at intervals of 10 feet based on Mean Sea Level, Darwin

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To accompany Record No 1963/131

PLATE 7

GEOCHEMICAL SURVEY IN THE RUM JUNGLE AREA N.T. 1962

RUM JUNGLE CREEK CASTLEMAINE HILL FLYNNS AREA

Radiometric Contours on Surface and Weathered Rock

FLYNNS

RUM JUNGLE CREEK SOUTH

Open Cut

Orebody

RUM JUNGLE CK SOUTH EXTENDED

CASTLEMAINE NORTH EXTENDED

CASTLEMAINE NORTH

CASTLEMAINE

CASTLEMAINE SOUTH

BATCHELOR LATERITES

800 0 800 1600 2400 FEET

Reference

- Surface radiometric contours at intervals of ·025, ·050 and ·100 mR/hr
- Limit of surface radiometric survey
- Radiometric contours in weathered rock at intervals of ·024, ·048 and ·096 mR/hr
- Same contours, results from phosphate party
- Limit of areas auger drilled by geochemical party

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PLATE 8

GEOCHEMICAL SURVEY IN THE RUM JUNGLE AREA N.T. 1962

RUM JUNGLE CREEK CASTLEMAINE HILL FLYNNS AREA

Copper and Lead Contours in Weathered Rock

800 0 800 1600 2400 FEET

FLYNNS

RUM JUNGLE CREEK SOUTH

Open Cut

Orebody

RUM JUNGLE CK SOUTH EXTENDED

CASTLEMAINE NORTH EXTENDED

CASTLEMAINE NORTH

CASTLEMAINE

CASTLEMAINE SOUTH

BATCHELOR LATERITES

Limits of Castlemaine anomaly tested for Cu with Biquinoline (accurate) and Pb with Dithizone (values are too low) in field laboratory in 1961.

Reference

- 200 — *Copper contours in weathered rock at intervals of 200, 400, 800 and 1600 p.p.m.*
- ....240.... *Lead contours in weathered rock at intervals of 240, 480 and 960 p.p.m.*
- *Limit of areas auger drilled by Geochemical Party*
- — — — F *Fault, position approximate*
- —?— —F *Fault, inferred*
- ~~~~~ *Shear zone*

25000 30000 35000

15000 10000 5000

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