

COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS.

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PROGRESS REPORT ON THE BRODRIBB PROSPECT

AT 31ST OCTOBER, 1953.

by

R.S. Matheson

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Brodribb Prospect

Conclusions

PLANS

<u>Plate No.</u>		<u>Scale</u>
1.	Geological Plan	1" = 100'
2.	Section in plane of diamond drill holes Nos. 1 and 4	1" = 40'
3.	Section in plane of diamond drill holes Nos. 2, 3 & 5	1" = 40'
4.	Section in plane of diamond drill hole No. 6	1" = 40'
5.	Radiometric drill hole logs	1" = 40'

PROGRESS REPORT ON BRODRIBB PROSPECT

AT 31ST OCTOBER, 1953

R.S. MATHESON

RECORDS 1953/122

The airborne scintillometer survey made in the latter half of 1952 revealed a number of anomalies in the Brodribb area. Detailed geological and geophysical work was carried out on this prospect during 1952 (Frankovich 1953) and some costeans were excavated by bulldozer.

In 1953 diamond drilling and further geological and geophysical work were undertaken.

The radioactivity anomaly in excess of 150 counts per minute is 1800 feet long and averages about 250 feet wide, and within it there are localised areas ranging up to about 500 counts per minute. Some "hot" spots of 1000 counts per minute are recorded. The background for the area is 50 counts per minute. The radioactive anomaly follows closely the remnants of a previously much more extensive, flatly distributed capping of ferruginous laterite. The laterite overlies contorted inter-bedded slates carbonaceous slates and quartzites of the Brock's Creek Group of Lower Proterozoic age, which are injected by quartz veins.

The mineral causing the radioactivity has not yet been identified but it is intimately associated with iron minerals (particularly hematite).

As a result of the costeaning done in 1952 it was noted that uranium values tended to drop off below the laterite capping, and persisted only in the roots of the laterite cap. It seemed likely however that below the superficially enriched laterite, leaching and impoverishment of any underlying uranium deposit could occur in the oxidised zone. Drilling was therefore recommended to test the belt of country below the anomaly in the primary zone. Further weight was given to the drilling recommendations by the fact that the Brodribb anomaly was to be used as a test case to interpret the value of numerous anomalies of the same type distributed sporadically through this area over a length of 6 miles.

During 1953, six diamond drill holes, with a total footage of 1583 feet, were drilled in the Brodribb area and were arranged to make an exhaustive test for the occurrence of a primary uranium deposit of importance in the area. Although streaks of pyrite and disseminated pyrite were encountered in the Brock's Creek meta-sediments below the anomaly, the uranium content was generally low, samples generally assaying less than 0.01% equivalent U₃O₈ (In this report equivalent U₃O₈ will be shown as e U₃O₈.)

Details of the six diamond drill holes are given below:-

<u>Hole.</u>	<u>Depth</u>	<u>Assay Results</u>
B1	403'	{ 30' - 35' 0.01% e U ₃ O ₈ 85' - 90' 0.01% e U ₃ O ₈ 115' - 120' 0.01% e U ₃ O ₈ 135' - 140' 0.013% e U ₃ O ₈ Remainder 0.01% e U ₃ O ₈
B2	118'10"	{ 40' - 45' 0.015% e U ₃ O ₈ Remainder 0.01% e U ₃ O ₈
B3	269'	{ 60' - 65' 0.01% e U ₃ O ₈ Remainder 0.01% e U ₃ O ₈
B4	250'	{ 45' - 50' 0.013% e U ₃ O ₈ 50' - 55' 0.019% e U ₃ O ₈ Remainder 0.01% e U ₃ O ₈

<u>Hole</u>	<u>Depth</u>	<u>Assay Results</u>	
B5	246'6"	All samples	0.01% e U ₃ O ₈
B6	300'	Preliminary results all samples 0.01% e U ₃ O ₈	

Sludge samples of sulphide bearing material from between 230 feet and 403 feet in hole B1 have been sent to the Northern Territory Mines Department, Alice Springs for gold assay, but the results are still awaited.

No further drilling is intended at Brodribb and a detailed report on the operations to date by Geologist D.H. Smith is at present in preparation.

CONCLUSIONS

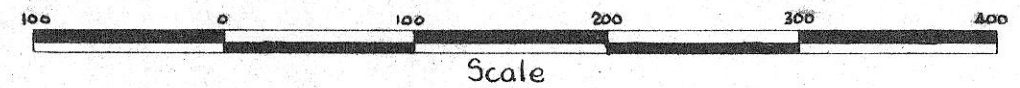
The results of the diamond drilling have been disappointing and it now appears fairly definite that the anomaly at Brodribb is the result of superficial enrichment in ferruginous laterite from a very low grade original source in the underlying Brock's Creek meta-sediments. The higher values in the drill holes appear to be associated with zones of hematized vuggy quartz and quartzite.

The superficially enriched ferruginous laterite at the Brodribb anomaly, and other similar anomalies in the area represent small reserves of radioactive material, but further work is required to determine what mineral or minerals are causing the radioactivity, what is the grade of the laterite and whether or not this radioactive material would be acceptable particularly from the view point of metallurgical treatment.

REFERENCE

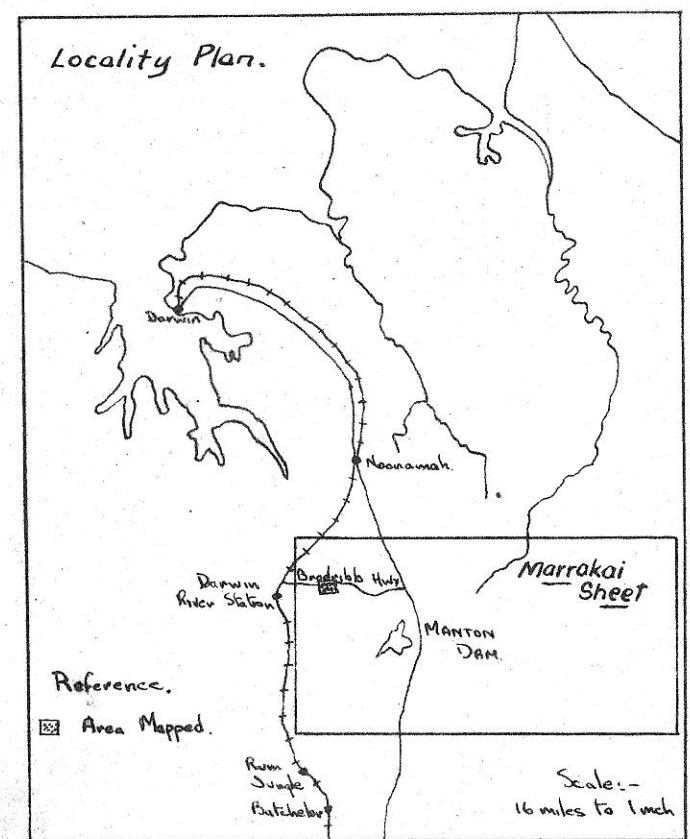
Frankovich, F. 1953: Preliminary Report on Brodribb
Uranium Deposit. Com.Bur.Min.Res.
Records Rept. 1953/23.

BRODRIBB RADIOACTIVE PROSPECT GEOLOGICAL PLAN

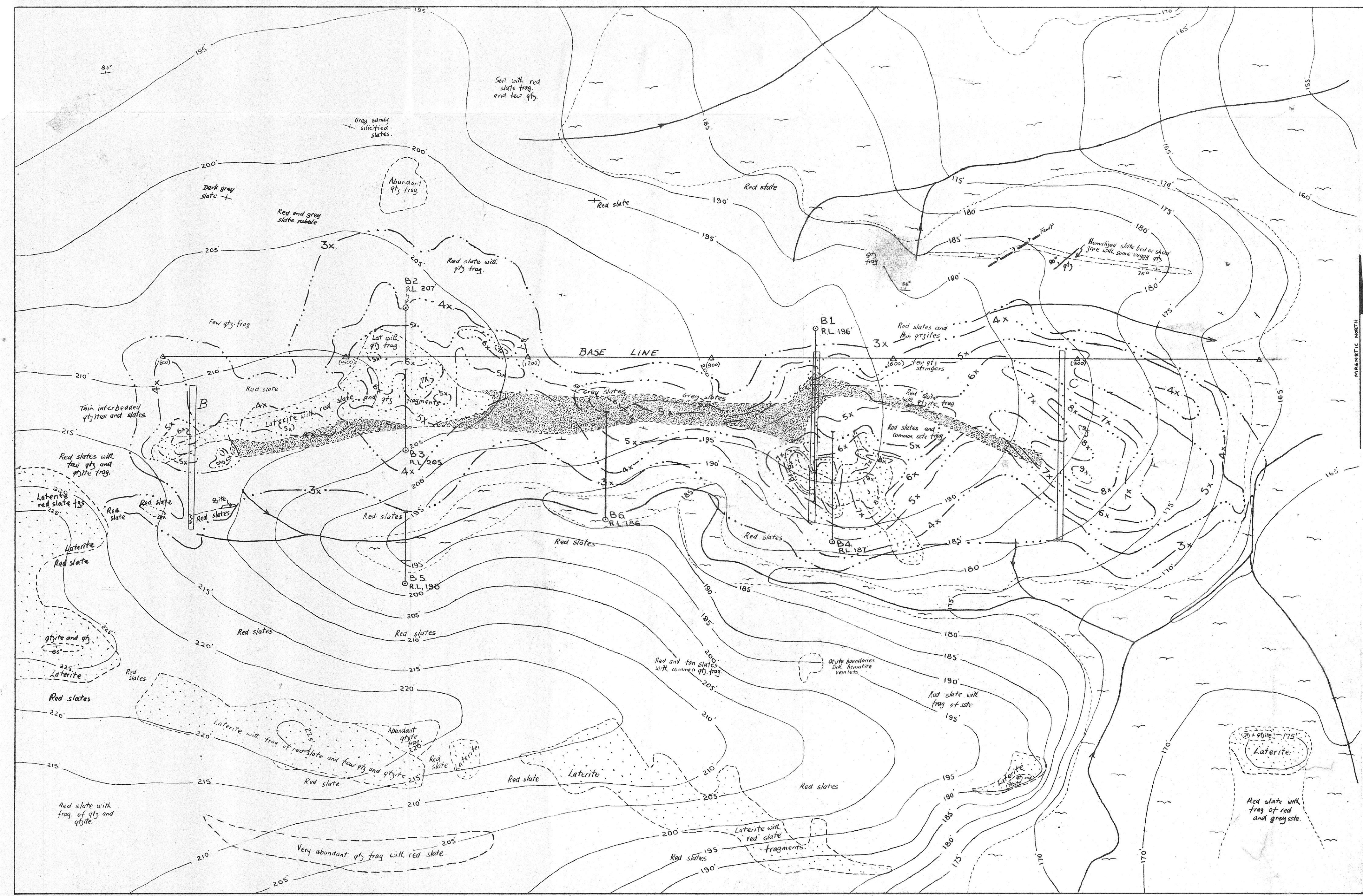


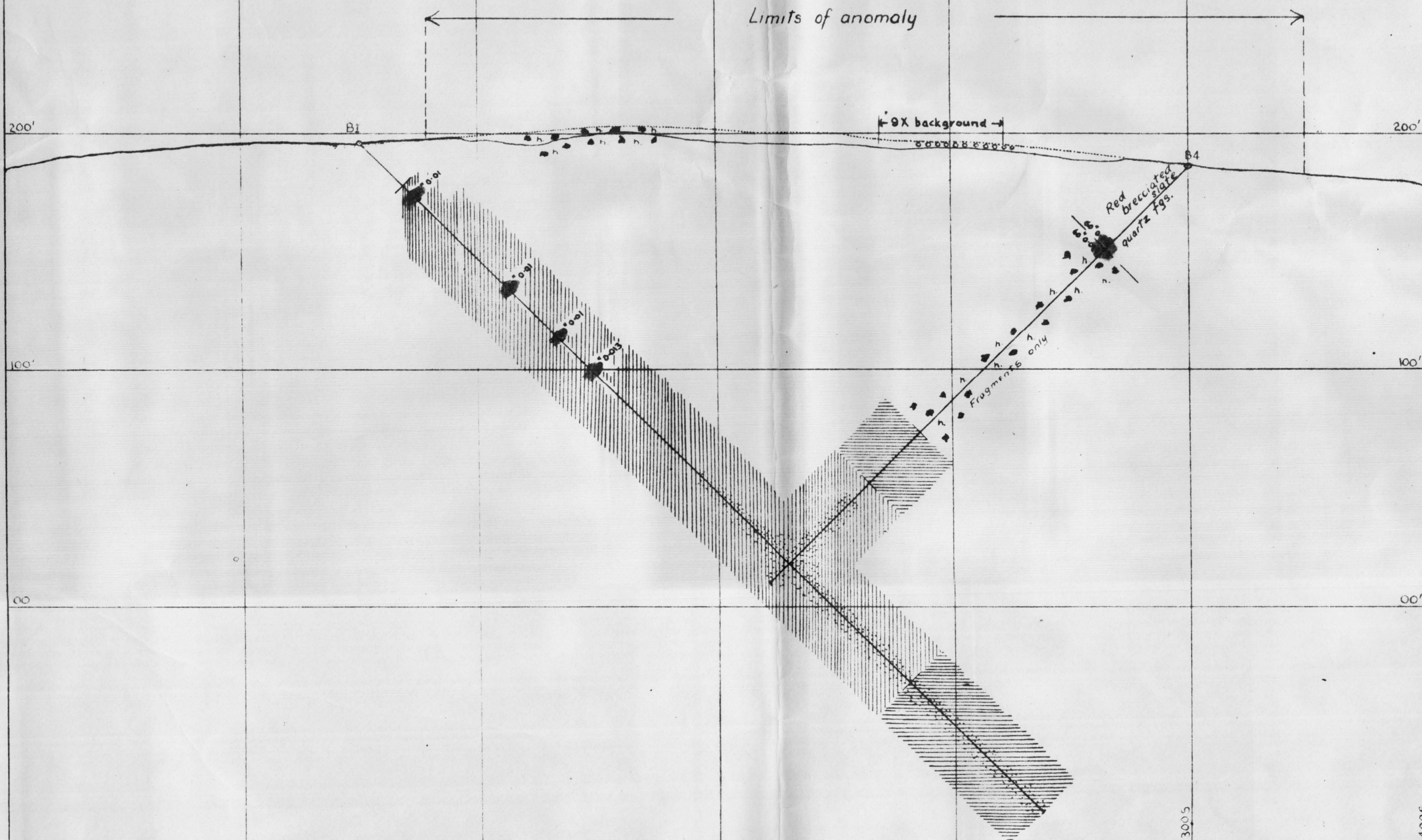
LEGEND

QUATERNARY	Alluvium	Geological boundaries
TERTIARY	Ferruginous laterite	Costeans
PRECAMBRIAN	Quartzite	Strike dip.
	Grey and red slate	Drainage
INTRUSIVES	Quartz veins.	Contours
		Radiometric contours.



After F.J. Frankovich.





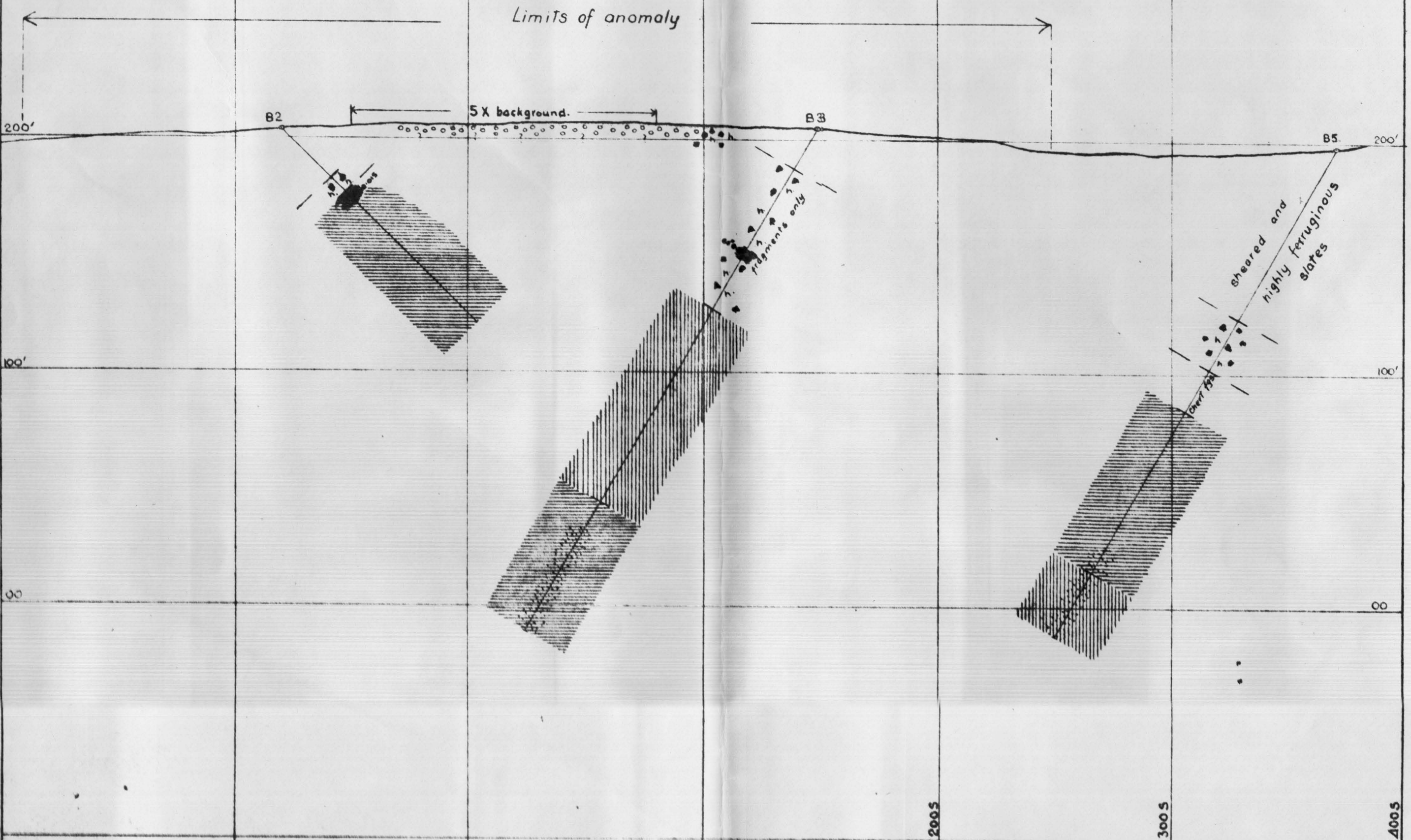
BRODRIBB PIROSPECT

SECTION IN PLANE OF D.D.H. B1, B4.

SCALE 0 40 80

LEGEND

- | | |
|--------------------------|-----------------------------------|
| Laterite | Sericitic schist |
| Grey slate | Sulphide Zone |
| Carbonaceous slate | % e U ₃ O ₈ |
| Vuggy Quartz + Quartzite | |



BRODRIBB PROSPECT
SECTION IN PLANE OF D.D.H. B2, B3, B5.

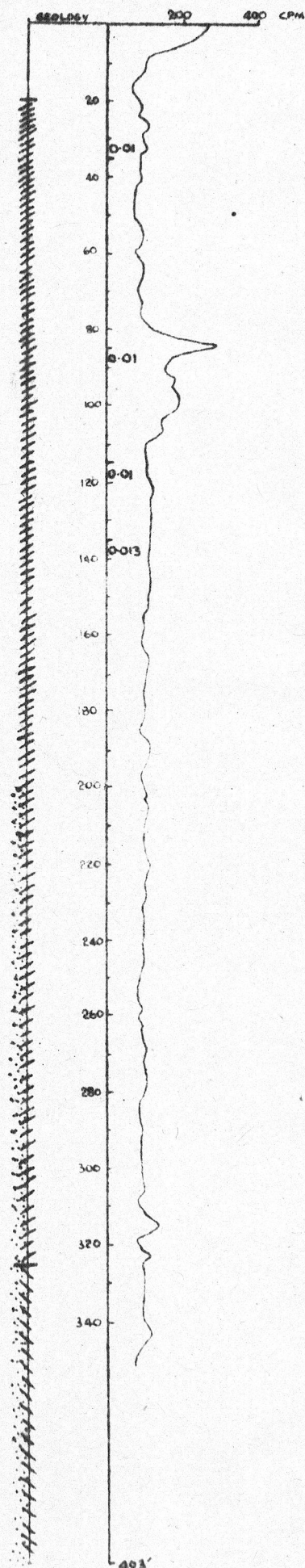
<p>Scale</p>	
LEGEND	
Grey and tan slate	Sericitic schist
Carbonaceous Slate	Sulphide Zone
Vuggy Quartz & Quartzite (hematized)	% e U ₃ O ₈
	Laterite



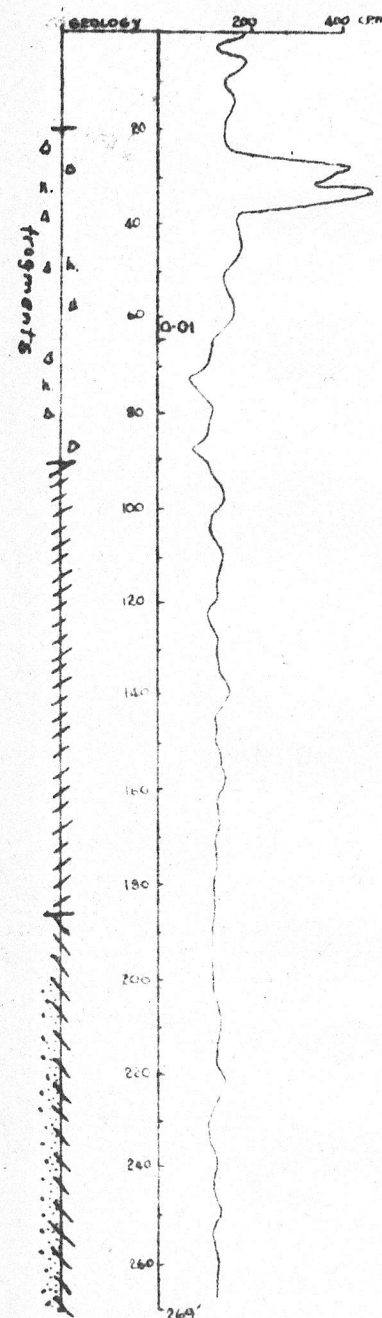
BRODRIBB RADIOACTIVE PROSPECT RADIOMETRIC DRILL HOLE LOGS

Scale — 1 inch = 40 feet.

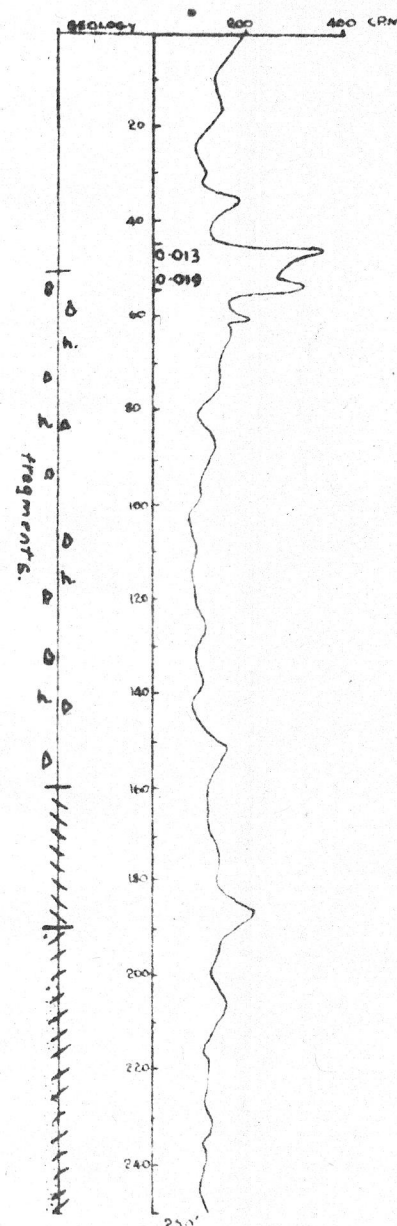
DRILL HOLE B1



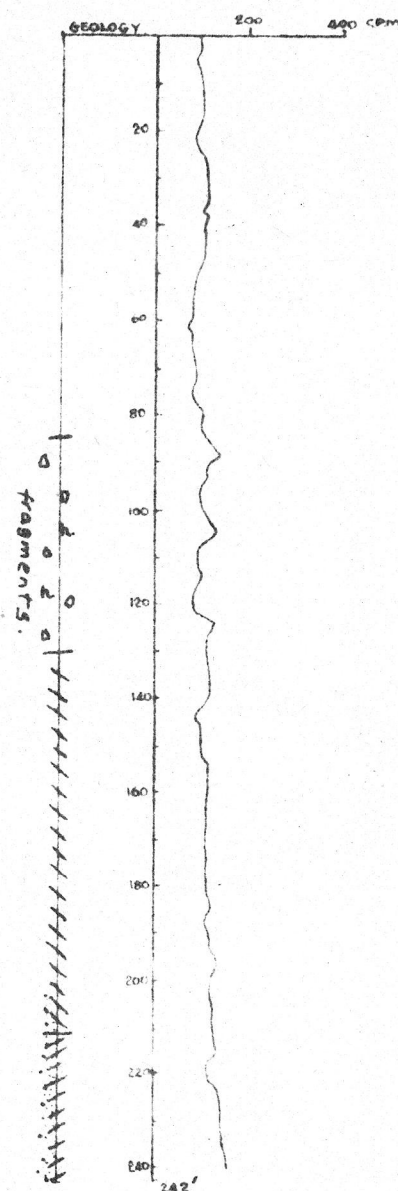
DRILL HOLE B3



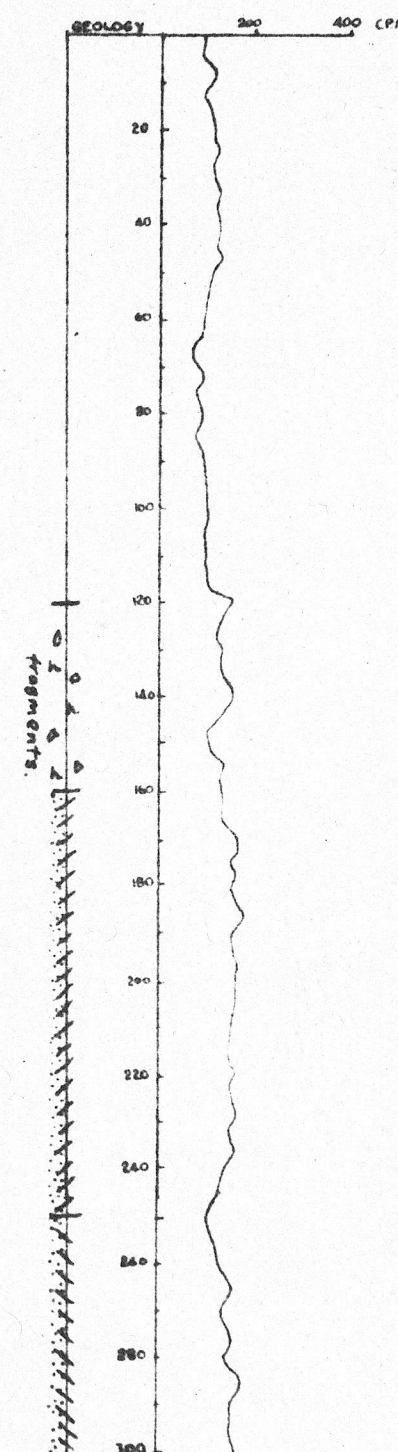
DRILL HOLE B4








DRILL HOLE B5



DRILL HOLE B6



REFERENCE

-  Grey Slate (Sericitic)
-  Carbonaceous Slate
-  Vuggy Quartz & Quartzite (hematized)
-  Sulphide Zone
- CPM. Counts per minute
- 0-02 %eU₃O₈
-  Tan and grey slates

Prepared by D.N. Smith
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