COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

THE URANIUM-COPPER DEPOSITS
RUM JUNGLE
NORTHERN TERRITORY, AUSTRALIA

ABRIDGED PROGRESS REPORT

by

C.J. Sullivan.

28th February, 1952

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THE URANIUM-COPPER DEPOSITS

RUM JUNGLE

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SUMMARY

At Whites Deposit, Rum Jungle, chalcopyrite-uraninite ore has been intersected in a cross-cut at a depth of 100 ft., and sampling shows a grade of 1.5 per cent. U_3O_8 and 4.6 per cent. Cu. over a distance along the cross-cut of 34 ft; material containing an average of 0.94 per cent. U_3O_8 and 2.97 per cent. Cu extends over 60 ft.

Uranium mineralization is known to occur over a length of 200 ft, but the average width and grade over this distance are unknown. The ore replaces flatly pitching drag-folded beds and the width of ore along the strike is expected to vary considerably.

At Dysons Prospect, about 30,000 tons of autunite-bearing ore, perhaps containing 0.25 per cent. U_3O_8, has been indicated by drilling.

Browns Prospect is similar in many ways to Whites, but no payable ore has yet been intersected.

In the district as a whole leaching of copper and uranium has been extensive and favourable areas are, in many cases, covered by soil. Structural conditions are such that non-outcropping ore is likely to be found.

To-date, 3,300 ft. of drilling and approximately 700 ft. of underground prospecting have been carried out in the area and the results obtained are considered highly encouraging.

Extensive drilling and underground development are warranted.

SITUATION

The centre of the Rum Jungle uranium-copper field is approximately 2.5 miles north-east of Rum Jungle Siding, which is on the Darwin-Birdum railway, 56 miles south of the port of Darwin, Northern Territory, Australia. The bituminized Stuart Highway passes about 9 miles east of the field and at a point 54 miles south of Darwin a further bitumen road leads westward for 7 miles to the Batchelor Airfield, a wartime air-base, not now equipped for flying. The mining field is 5 miles north of Batchelor Airfield.

HISTORY.

Surface showings of copper carbonates were discovered in the area in the late 19th century and costeans and shallow shafts were sunk. Limited diamond drilling was undertaken on one of the copper prospects, known as Browns, but the holes were not properly sited. The primary mineralization in the area was not adequately tested. No uranium minerals were noted during this time.

In September, 1949, a prospector, J. White, after reading a handbook on uranium prospecting, published by the Australian Bureau of Mineral Resources, re-examined the copper deposits and discovered traces of torbernite and uranium ochres. His discovery was examined by Bureau geologists and geophysicists in September and October of 1949, and testing of the deposits was commenced in May, 1950, after the monsoonal wet season which lasts from November to April, inclusive. Diamond drilling with a light portable machine was undertaken and four prospecting shafts were sunk on various deposits to test the character of the primary mineralization. Encouraging results were obtained, and in 1951, a contract was let for the systematic exploration and development of the more promising deposits.

The initial contract was for about 2,000 feet of development, but this has been carried out only slowly, partly because of difficulties in obtaining men and equipment; the ground is extremely heavy, especially when soaked with water in the wet season and close timbering is essential.

During 1950-51, a total of 3,229 feet of diamond drilling was undertaken, mostly to test, to a depth of about 100 feet, the nature of the material underlying radioactive surface showings. Core recovery has been extremely poor, but it has been found that with systematic collection, sludges yield reliable indications of the presence of uranium.

Radiometric assays, using beta-ray counters, are made in the field and have been found to check well with radiometric assays made in the Melbourne laboratories of the Bureau and with chemical assays undertaken in the Government Laboratories Perth, Western Australia.

The geological and geophysical work of the Bureau has resulted in the discovery of three deposits which may be of economic importance and a number of other low-grade showings have been found. A considerable amount of information on the mineralogy, structure and possible importance of the deposits has been obtained.

GEOLOGICAL SETTING OF DEPOSITS

The deposits so far discovered are situated on the southern flank of a domal structure in Pre-Cambrian sediments. The core of the dome is occupied by the Rum Jungle granite, which is oval in shape and is approximately 8 miles in its major horizontal dimension at the present surface. The area has been photographed only recently (still incomplete) and mapping has been concentrated in the area of known mineralization which is shown on Plate 1. A regional map is being prepared.

The sedimentary rocks are mainly a shallow-water group, consisting of conglomerates, quartzites and limestone. A slate formation approximately 1,000 feet in thickness, which is graphitic in part, is the main host rock for the ore deposits.

The Giants Reef fault (Plate 1) is, perhaps, the most striking structural feature in the area. It trends north-westerly and has a near-vertical dip. It has been observed in aerial photographs to continue for 55 miles to the south-west. At Rum Jungle, it faults both the granite and the sediments and has a horizontal displacement of 3½ miles. Though no uranium has been found in the fault itself, the ore deposits appear to be related to the presence of the fault.

As shown in Plate 1, the Giants Reef fault has led to the formation of a major drag fold, whose axis trends parallel with the fault. The main ore deposits are situated along the axis of this drag fold and are associated with axial plane shears which dip 85° N.

A second group of faults, complementary to Giants Reef Fault, trend about N 30° E. and dip easterly. One major example of this type of fault passes 240 feet west of No. 4 Shaft, Whites Deposit, and has a horizontal displacement of 2,000 feet. The relationship of these faults to ore occurrence is not well known, but within the workings, it has been found that small faults of this type bound the ore shoots in some cases.

The known uranium-copper deposits at Rum Jungle occur in slate, the higher-grade material being found in graphitic portions of the bed. This bed is relatively incompetent and in the vicinity of the ore deposits, has been dragged and puckered. Carbonaceous material precipitates uranium from solution and this may have had some effect. Although the major concentrations of uranium now found have undoubtedly been formed in structural traps during a period of folding, faulting and granite formation, it appears not unlikely that this carbonaceous bed originally contained syngenetic uranium in small quantities; certainly, the graphitic slate is a useful aid to prospecting, and although, at present, there is little direct evidence of continuous mineralization of the Congo-Rhodesian type along it, the presence of considerable soil and alluvial cover and the prevalence of surface leaching of copper and uranium minerals make it necessary to prospect this bed with some thoroughness.

THE LODES

The main uranium mineralization has been found over a length of approximately 8000 feet of the graphitic slate bed (Plate 1). From west to east, the most important deposits are Browns Prospect, Whites Deposit and Dysons Prospect. Lesser occurrence of uranium have been found at the Intermediate Prospect and at Whites Extended. Disseminated uranium mineralization, apparently not associated with definite sulphide deposits, has been found elsewhere in the area, but these occurrences do not at present seem to offer possibilities of production and will not be further mentioned.

WHITES DEPOSIT

Whites Deposit is described first, because so far it is the most important and most is known about it.

Mineralogy, Grade

At the surface, graphitic schists containing malachite, torbernite and yellow uranium ochres were found at intervals over a length of 200 feet. According to Stillwell pseudo-malachite replaces torbernite in some cases. No continuous lode could be traced and costeaning revealed what appeared to be three separate lodes, none of which could be traced for more than 20 feet. Anomalous radioactivity was found over a length of 600 feet and a width of approximately 200 feet.

There was no limonitic gossan and it was thought possible that the uranium staining was due to precipitation from ground waters by the graphitic slate. The amount of copper at the surface is quite small compared with that found at the 100 ft. level. However, microscopic study indicated the former presence of sulphides and a shaft (No. 2) was sunk on the best surface showing. In this shaft, ore containing approximately 1 per cent. U_3O_8 was found to a depth of 6 feet, below which there appeared to have been considerable leaching of uranium. From 6 ft. to 22 ft. the grade fell to about 0.1 per cent. U_3O_8. Water table was at 28 ft. and below this was found essentially primary ore, consisting of slate impregnated with chalcopyrite, crystalline uraninite, pyrite and cubanite; around the water table, chalcocite and covellite were of common occurrence and a polished section investigation by Stillwell showed that these

replaced uraninite in some cases. From 28 ft. to 45 ft. (final depth) the ore contained approximately 1.5 per cent. U_3O_8 over a width of 5 ft. (shaft width).

The most important discoveries were made late in 1951 and early in 1952. A southerly cross-cut at the 100 ft. level, from No. 4 Shaft (Plate 3) intersected, over a width of 34 feet, ore containing 1.51 per cent. U_3O_8 and 4.6 per cent. Cu. To the north of this high-grade ore, there is a width of 22 ft. containing 0.12 per cent. U_3O_8 and 0.26 per cent. Cu and a further 4 ft. width to the south of the main lode contains 0.21 per cent. U_3O_8. Copper mineralization continues to the limits of crosscutting. Taking a cut-off value of 0.07 per cent. U_3O_8, the cross-cut exposed, over a width of 60 ft., ore containing 0.94 per cent. U_3O_8 and 2.97 per cent. Cu. In the 100 ft. level from No. 1 shaft, ore containing 1.37 per cent. U_3O_8 was found over a width of 12 ft. These results are tabulated below:-

Summary of Sampling Results to 22/2/52.

No. 4 Shaft
100 ft. level
S. Cross-cut

	U_3O_8			Cu
High-grade Ore	W. Wall	E. Wall	Mean	E. Wall
Position in Cross-Cut	50'-86'	44'-76'		44'-76'
Width	36'	32'	34'	32'
Cut off value	0.58%	0.51%	0.51%	2.4%
Average Grade	1.88%	1.09%	1.51%	4.6%
Low-Grade Ore				
(a) North of High Grade Ore				
Position in Cross-Cut	30'-50'	20'-44'		20'-44'
Width	20'	24'	22'	24'
Cut off value	0.07%	0.07%	0.07%	0.15%
Average Grade	0.13%	0.11%	0.12%	0.26%
(b) South of High-grade Ore				
Position in Cross-Cut	86'-90'	76'-80'		76'-80'
Width	4'	4'	4'	4'
Cut off value	0.20%	0.23%	0.20%	3.6%
Average Grade	0.20%	0.23%	0.21%	3.6%
High- and Low-Grade Ore				
Position in Cross-Cut	30'-90'	20'-80'		20'-80'
Width	60'	60'	60'	60'
Cut off value	0.07%	0.07%	0.07%	0.15%
Average Grade	1.19%	0.68%	0.94%	2.97%

No. 1 Shaft
100 ft. Level
S. Cross-Cut

High-Grade Ore			
Position in Cross-Cut	14'-26'	14'-26'	
Width	12'	12'	12'
Cut off value	0.42%	0.39%	0.39%
Average Grade	1.09%	1.66%	1.37%

Additional information obtained from drilling is shown on the longitudinal section, Plate 6. This shows that the presence of uranium-bearing ore has been indicated over a length of 200 ft; a drill-hole 60 ft. north of No. 4 Shaft proved ore to a depth of 180 ft.

Possible Structure.

Plate 1 shows that the group of prospects found so far form a line roughly parallel to Giants Reef. In the detailed mapping of exposures at Whites Prospect, mineralization was found to follow 85° North dipping shears which are parallel to Giants Reef in strike. One of these was followed down in No. 2 shaft and they may be major controls.

The ore exposed in the cross-cut from No. 4 shaft shows clearly, however, that replacement of particular beds has taken place and that the higher-grade ore occurs where these beds are most crumpled; the crumpling is most marked in the vicinity of minor shears and apparently results from shearing. In both 100 ft. level cross-cuts, the minor folding pitches easterly at 30 degrees to 40 degrees, and, as the ore is replacing these folded beds, it is expected that the shoots will pitch with the folding.

Minor shears have been formed on the limbs of anticlinal folds, producing attenuation on the limbs and thickening of the crest. Ore is found in the crest and produces a saddle-reef effect. This may be seen in hand specimens and in the section through No. 1 Shaft (Plate 5). The section through No. 4 Shaft (Plate 4) also suggests that an anticline is present.

The pitch of the intersection of the Giants Reef type faults and of the minor faults on the limbs of drag folds is much the same as the pitch of the drag folds themselves.

On the basis of the above evidence, it is thought likely that the dominant structure is of the Broken Hill type - a semi-vertical shear, or zone of shearing, with favourable beds dragged along the shear and replaced by ore. The pitch of the ore is likely to be that of the drag-folded beds across the shears, in this case, about 35 degrees east. The crests of the anticlinal drag folds are the most favourable for ore, and, in the section through No. 1 Shaft, this produces a Bendigo-type structure. In the section through No. 4 Shaft, however, it appears that only the southern limb of the fold carries ore, which is limited to the northward by the shear passing through No. 2 Shaft (Plate 4).

Some implications of the proposed structure are suggested on the 100 ft. level plan (Plate 3).

The ore shoot intersected in the No. 4 Shaft cross-cut, is expected to trend north-easterly and terminate on the east-west vertical fault. In view of drilling results other drag folds lying to the east of this fold apparently make ore. The shoot in No. 4 Shaft cross-cut may continue to the south-west for an unknown, but limited, distance, the limitation being imposed, by the dying out of the drag folding. Further ore was found in D.D.H. WDB, 50 ft. west of No. 4 Shaft (Plate 6) and this may indicate the presence of another shoot.

The pitch-length of the uranium-bearing drag-folded beds is unknown and drilling to test this is very important. If the Bendigo-type aspects of the structure are kept in mind, drilling for repetitions of saddle-like deposits is warranted. This would be much the same as testing for further favourable horizons, dragged against a shear.

Possible Size.

Estimates of the possible size of the deposit depend on structural interpretations and on the persistence of the mineralization. The width exposed in No. 4 Shaft cross-cut may be somewhat misleading; part of the cross-cut follows the same bed for some distance and thus does not necessarily expose the true thickness of the ore. Estimates of reserves will have to await further drilling and underground development. However, for a uranium deposit, present exposures are impressive and it would not be surprising if the 100 ft. level development exposed 300 to 500 tons of ore per vertical foot.

DYSONS PROSPECT

The known information is shown in Plate 7.

At the surface, the uranium-bearing mineral was mainly autunite with smaller amounts of yellow uranium ochres and occasional green secondary minerals. No copper is present and the deposit is quite different from that found at Whites and Browns. Below water table much pyrite occurs.

In the first costean put down, 3 seams of uranium-bearing material, each 3 to 4 ft. in thickness, occur over a total width of 16 ft. Samples from the costean contained up to 5% U_3O_8. Subsequent costeaning revealed a lode-system extending over a length of 130 ft., but individual seams of ore within this system appear to be discontinuous. Scout drilling and shaft sinking have shown that autunite extends for almost 100 ft. below the surface and the nature of the primary uranium mineralization is still unknown. Quartzite intersected in a shaft sunk to a depth of 84 ft. contains abundant pyrite.

The ore found to-date occurs in bands of graphitic slate interbedded with quartzite. These beds dip 30° to the east and the ore would not be easy to mine.

Four drill holes cut lode channels at up to 160 ft. down-dip. Core recovery was poor, but sludge samples gave the following results:-

Drill Hole	Width (Feet)	Grade (% U_3O_8)
DDA	15	0.22
DDB	30	0.09
DDC	10	0.51
DDE	15	0.44

The drilling is believed to have indicated the presence of possibly 30,000 tons of oxidized ore containing 0.25 per cent. U_3O_8. A shaft has been commenced with a view to obtaining more accurate information concerning the amount of ore present.

It is considered possible that the ore following the flatly-dipping beds is in a secondary structure, and that the dominant structure is vertical, as at Whites Deposit. This possibility could be tested by drilling.

BROWNS PROSPECT

At the surface, Browns Prospect is the most impressive copper showing in the district and is the only one which has received any attention in the past. Malachite is found in contorted and sheared graphitic slate over a length of approximately 1200 ft. and over widths up to 50 ft. The amount of copper present at the surface would probably not average more than 0.5 per cent., but in view of the experience

at Whites Deposit, payable copper mineralization may be present in the primary zone. A marked self-potential anomaly, which could be partly due to graphitic slates, but may also represent sulphide mineralization, has been traced through the deposit.

At the eastern end of the copper-bearing outcrop, uranium occurs at the surface in small quantities over a length of 300 ft. Two drill holes tested these showings in 1951, but sludge sampling did not reveal uranium in excess of 0.1 per cent. U_3O_8.

A shaft is to be sunk on a showing of ore carrying uranium ochre, situated 60 ft. east of the old Main Shaft (depth 30 ft.). The uranium ochres are contained in a seam about 10 inches thick which contains 0.5 to 1.0 per cent. U_3O_8 and may be traced over a length of 10 ft. It is hoped that this may lead to a discovery similar to that at Whites, where surface showings of uranium were not greatly different from those at Browns and copper deposition at the surface was not nearly as impressive. Apart from the effects of surface leaching, non-outcropping ore could occur for structural reasons, as indicated at Whites Prospect.

WHITES EXTENDED.

At the surface, marked radioactivity was found over a length of 130 feet and scattered fragments of autunite-bearing sandstone were noted. Two costeans were sunk 50 ft. apart; in one, material containing 0.39 per cent. U_3O_8 was found over a width of 16 feet and in the second, a lode occurs containing 0.25 per cent. U_3O_8 over a width of 5 ft.

The deposit was tested by two drill holes to an average depth of 100 ft. but none of them intersected primary mineralization. Results were as follows:-

	Depth ft.	Grade % U_3O_8
No. 1 DDH	90-126	0.122
No. 2 DDH	30- 35	0. 10

The deposit is similar to Dysons and has been shown to contain a small reserve of low-grade secondary ore. The nature of the primary material is still unknown and further testing is warranted.

ACKNOWLEDGMENTS

The above report is based on geological work carried out at various times by H.J. Ward, R.S. Matheson, E.K. Carter, N.J. Mackay, K.W.B. Iten and G. Sleis, of the geological staff of the Bureau. Geophysical investigations by D. Dyson, M. Allen and others has also been utilized. The ideas presented on the structural control of the ore deposits are mainly those of the author.

PLATE I.

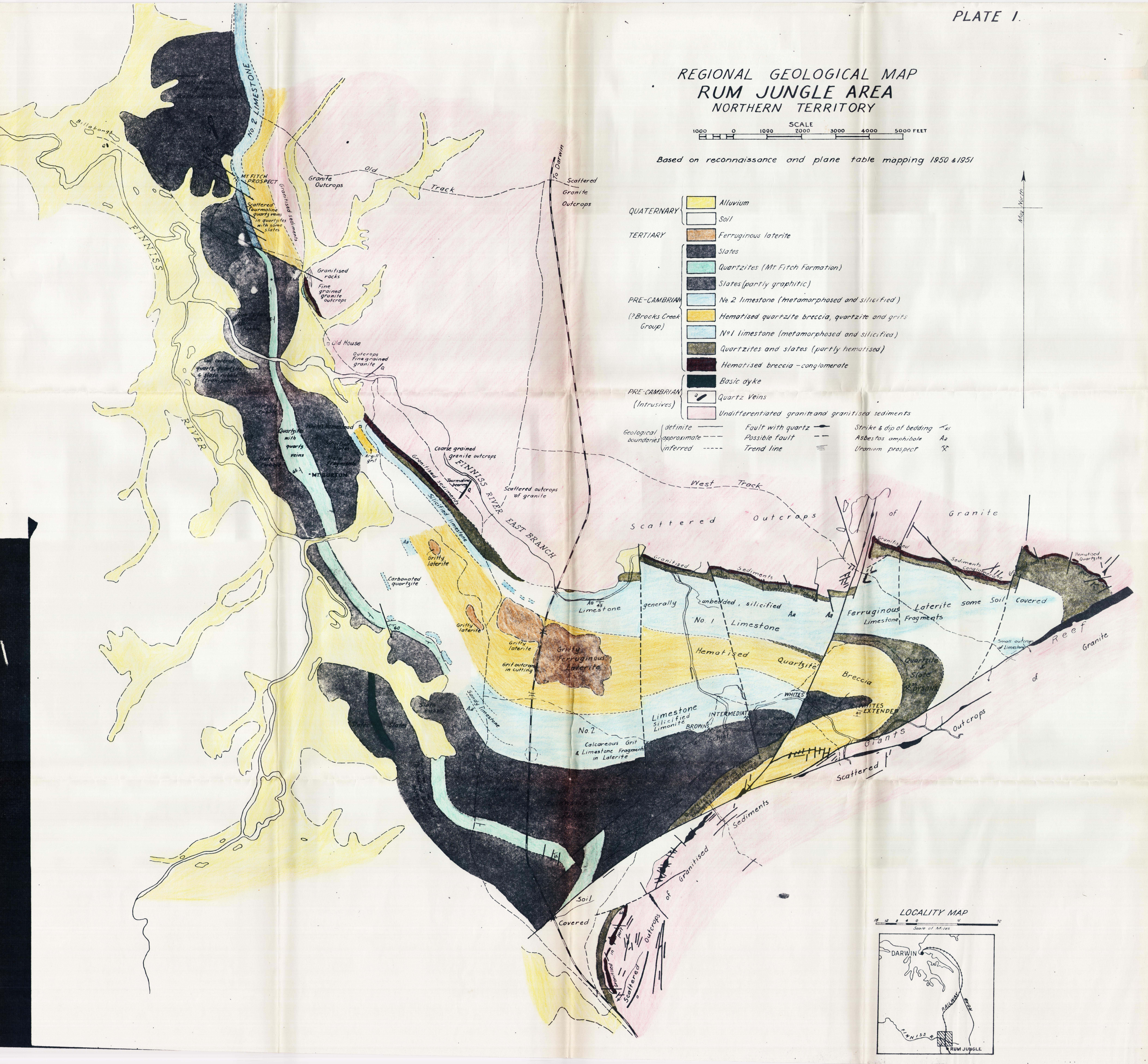

REGIONAL GEOLOGICAL MAP
RUM JUNGLE AREA
NORTHERN TERRITORY
SCALE
1000 0 1000 2000 3000 4000 5000 FEET
Based on reconnaissance and plane table mapping 1950 & 1951
QUATERNARY
Alluvium
Soil
TERTIARY
Ferruginous laterite
Slates
Quartzites (Mt Fitch Formation)
Slates (partly graphitic)
PRE-CAMBRIAN
(?Brocks Creek Group)
No 2 limestone (metamorphosed and silicified)
Hematised quartzite breccia, quartzite and grits
No 1 limestone (metamorphosed and silicified)
Quartzites and slates (partly hematised)
Hematised breccia - conglomerate
PRE-CAMBRIAN
(Intrusives)
Basic dyke
Quartz Veins
Undifferentiated granite and granitised sediments
Geological boundaries
definite
approximate
inferred
Fault with quartz
Possible fault
Trend line
Strike & dip of bedding
Asbestos amphibole
Uranium prospect
Mag North
Billabongs
No 2 LIMESTONE
MT FITCH PROSPECT
Scattered tourmaline quartz veins in quartzites with some slates
Granitised sediments
Granite Outcrops
Old Track
To Darwin
Scattered Granite Outcrops
FINNISS RIVER
Granitised rocks
Fine grained granite outcrops
Old House
Outcrops fine grained granite
Quartzite with quartz veins
MT BURTON
Argill grit
Coarse grained granite outcrops
Granitised sediments
Silicified limestone
FINNISS RIVER EAST BRANCH
Scattered outcrops of granite
West Track
Scattered Outcrops of Granite
Gritty laterite
Carbonated quartzite
Granitised Sediments
Limestone generally unbedded, silicified
No 1 Limestone
Ferruginous Laterite some Soil Covered
Limestone Fragments
Gritty Ferruginous Laterite
Grit outcrop in cutting
Hematised Quartzite Breccia
Quartzite & Slate
Hematised Quartzite
Small outcrop of Limestone
Reef
Giants Reef
Granite
Sandy limestone
Slates
Limestone Silicified Limonite
No 2
Calcareous Grit & Limestone Fragments in Laterite
WHITES
INTERMEDIATE
BROWNS
WHITES EXTENDED
Scattered Outcrops of Granitised Sediments
Soil Covered
LOCALITY MAP
Scale of Miles
DARWIN
RAILWAY
FINNISS R
RUM JUNGLE

PLATE 2

SURFACE GEOLOGY & WORKINGS
WHITE'S DEPOSIT
RUM JUNGLE, NORTHERN TERRITORY.

SCALE
40 0 40 80 120 160 FEET

TRUE NORTH
MAGNETIC NORTH

Q.B.
Laterite.
Quartz & Ironstone Rubble.
Q.B. Rubble.
Ironstone Rubble.
Carb Slate.
Odd outcrops of Carb Slate.
Weathered Graphitic Schist.
Carbonaceous Slate.
Weathered Haematitic Schist.
Carb. Slate.
White-spotted Slate.
Odd outcrops of Carb. Slate.
Quartzite Rubble.
Spotted Slate.
Quartz & Slate Rubble.
Micaceous Graph. Schist.
Blocky Slate Rubble.
Weathered Felspathic Slate.
Soil Covered & Blocky Slate Rubble.
Weathered Schist.
Soil Covered & Slate Rubble.
Magnesite
Weathered Graph. Schist.
Graphitic Schist
Micaceous Schist
Siliceified Slate. Rubble.
Alluvium
Costean 'B'
Costean 'A'
Kaolinised Talcose Slates
Graph. Sch. with Malachite
Soil with Secondary U.
Malachite stained Talcose Slate.
Talcose Slates & Schists.
Carb. Slate containing Torbernite & Malachite
Fissile Graph. Sl. with Phosphuranylite
Carb. Sl. with Malachite
Graph. Sch.
Carb. & Graph Schist.
Projection of fault at 50ft. level.
Soil Covered with Slate Rubble.
Soil Covered.
Base Line
100N 311·6' 100E
100N 315·6' 400E
Slate Rubble.
Alluvium.
EAST FINNISS RIVER.
No 1 SHAFT
No 2 SHAFT
No 3 SHAFT
No 4 SHAFT
WDA WDB WDC WDD WDE WDF WDG WDH WDI WDJ WDK WDL WDM WDN

REFERENCE

- Approximate Geological Boundary
- Inferred Geological Boundary
- Isolated Outcrops
- 60 Strike and dip of strata
- Vertical dip
- 30 Strata with curving dip
- 18 Pitch of minor anticline
- F F Probable fault
- Shaft, accessible
- Costean
- Dump
- W.D.A Diamond drill hole
- Base peg
- Direction of water flow in stream
- 310 Topographical Contours (feet above S.L.)
- 2x Geiger-Muller contours (times background)

- Soil
- Alluvium
- Laterite
- Quartz breccia
- Carbonaceous slate and graphitic schists
- White-spotted slate
- Felspatic slate
- Talcose slates, in part micaceous and chloritic.
- Qz Quartz
- Secondary uranium mineralisation

D52/A8/NT47C-15

WHITES DEPOSIT

RUM JUNGLE

PLAN OF 100 FOOT LEVEL

PLATE 3

FEET 20 0 20 40 60 FEET
Scale

200 N

200 N

100 N

Mag. North

100 E

200 E

300 E

400 E

No 4

0·01 (Vertical Sample)
0·01 , 0·25 % Cu
0·02 , 0·70 % Cu
0·14 , 0·46 % Cu
0·10 , 0·15 % Cu
0·17 , 0·22 % Cu
0·07 , 0·24 % Cu
0·07 , 0·23 % Cu
0·77 , 2·40 % Cu
1·50 , 5·3 % Cu
0·95 , 2·9 % Cu
1·20 , 4·05 % Cu
1·05 , 4·2 % Cu
1·14 , 7·8 % Cu
0·71 , 6·0 % Cu
0·28 , 3·6 % Cu
0·05 , 6·7 % Cu
0·02 , 7·9 % Cu
0·01 , 3·1 % Cu
< 0·01 , 1·8 % Cu
< 0·01 , 3·5 % Cu

85°
50°

WDE 0·75
WDN 0·37
WDJ 0·29

No 1

Strong Cu mineralisation

0·04
< 0·01
0·01
Attn. 32°
2·94 (Vertical Sample)
0·39
< 0·01
< 0·01
< 0·01

70°
60°

WDF 0·31

Probable fault projected from surface

REFERENCE

- Horizontal Channel sample
- 0·14 U assay result (% U_3O_8)
- 2·3 % Cu Cu assay result
- Survey line
- WDF 0·51 Diamond drill hole intersection (sludge assay, % U_3O_8)
- Strike & dip of strata
- Trend lines
- Fault
- 32° Pitch of fold
- Carbonaceous slate & graphitic schist
- Talcose chloritic schist
- Quartz, mineralised
- High grade U ore

PLATE 4

S

N

00 N

100 N

200 N

WDA

No. 2.

No 4

RL 00

Alluvium

E pit

Quartz

Pyrite mineralization

-50'

? Flattening of drillhole ?

Pyrite mineralization

Quartz

Quartz

4', 0.21% U_3O_8

34', 1.51% U_3O_8

22', 0.12% U_3O_8

Shear

-100'

-150'

-200'

Projected bedding

Suggested bedding

Bedding

Shear

Ore :

1.0% U_3O_8 & greater

0.5% U_3O_8 & < 1.0%

0.1% U_3O_8 & < 0.5%

Proposed drill holes

White's Deposit

Rum Jungle N.T.

Cross-section through No.4 Shaft
looking West

Scale 1" = 20'

NT47J-3

PLATE 5

S

N.

100 N

200 N

300 N

No 1

Malachite

0·1 % U_3O_8

0·1 % U_3O_8

RL. 00

E pitch

12", 0·14 % U_3O_8

Lode on Axial Plane

Axial Plane

12', 1·4 % U_3O_8

ore?

ore?

-50'

-100'

-150'

-200'

Projected bedding

Suggested bedding

Bedding

Shear

Ore :

1.0% U_3O_8 & greater

0.5% U_3O_8 & < 1.0%

0.1% U_3O_8 & < 0.5%

Copper mineralization

Proposed drill holes

White's Deposit

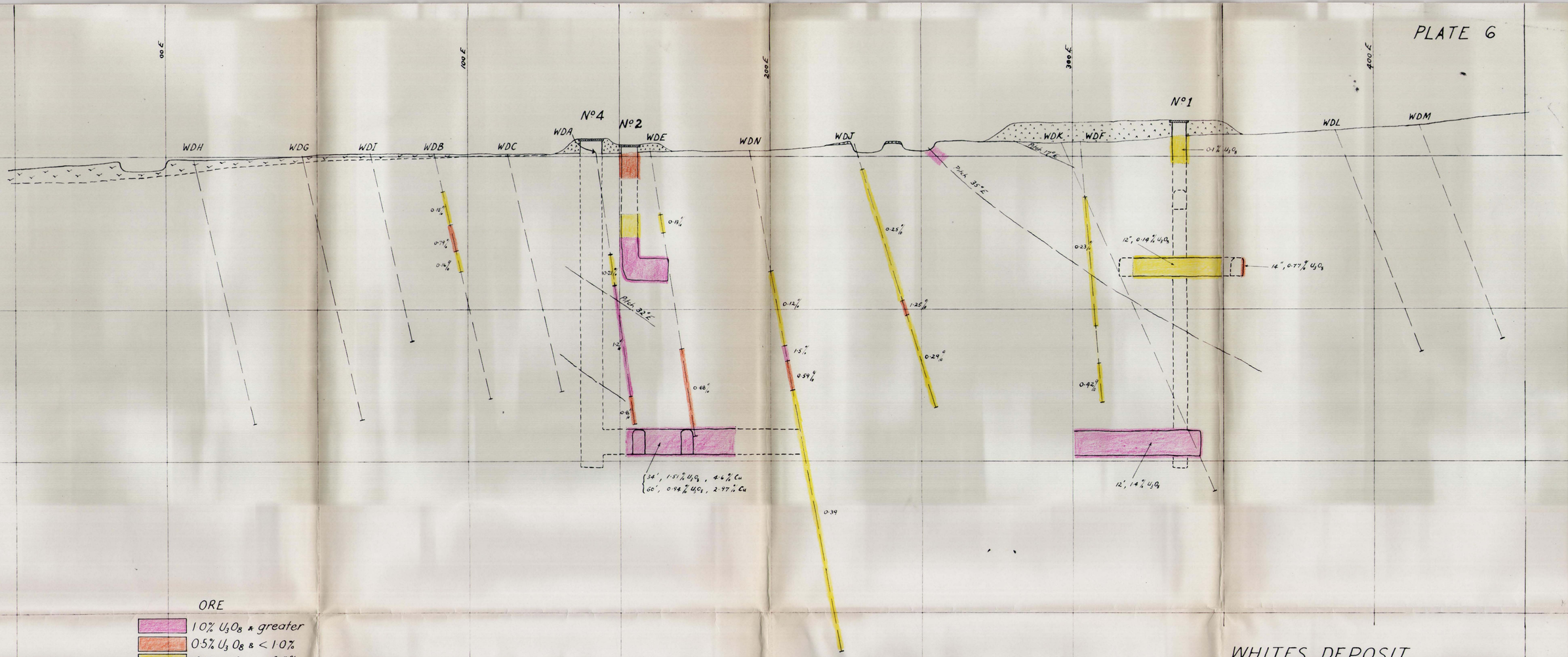
Rum Jungle N.T.

Cross-section through No. 1 Shaft looking West

Scale 1" = 20'

NT47J-4

PLATE 6



ORE

- 1·0% U_3O_8 & greater
- 0·5% U_3O_8 & < 1·0%
- 0·1% U_3O_8 & < 0·5%

WDB — Diamond drill holes

WHITES DEPOSIT
RUM JUNGLE N.T.

Longitudinal Projection through Nos. 1 & 4 Shafts

Scale: 20 feet to an Inch.

NT47J-2

DYSON'S FIND - RUM JUNGLE, N.T.

SURFACE GEOLOGY & WORKINGS

PLATE 7