CORONATION HILL JOINT VENTURE

SADDLE RIDGE OPEN CUT, NORTHERN TERRITORY
ROCK CHIP SAMPLING

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ROCK-CHIP SAMPLING

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BRISBANE
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CONTENTS

SUMMARY 1
1. INTRODUCTION 2
   1.1 Tenements 3
   1.2 History 3
2. GEOLOGY AND MINERALIZATION 4
3. EXPLORATION PROGRAMME 6
4. RESULTS 7
5. CONCLUSIONS 8
6. RECOMMENDATIONS 9
   REFERENCES 10

Appendices:
Appendix 1: Sample Preparation

Figures:
Figure 1: Location Map A4-668
Figure 2: Location of Tenements A4-848
Figure 3: Diagrammatic Section Saddle Ridge Open Cut A4-846

Plates:
Plate 1: Saddle Ridge Interpretative Geology and Rock-Chip Geochemistry A1-538
SUMMARY

Rock-chip sampling, carried out at the Saddle Ridge Open Cut during the 1985 field programme, failed to isolate gold results above 0.12 ppm Au.

The open cut is therefore not prospective for economic gold mineralisation.

Scope exists for exploration beneath the open cut and at adjacent prospects.
1. INTRODUCTION

The Saddle Ridge Open Cut, previously known in the early prospecting days of the 1950's also as the B.M.R. No. 2 Prospect, lies in a small saddle in the southeast corner of Scinto Plateau (see Figure 1).

The prospect is approximately 8 km southeast of El Sherana Camp, and 10 km northeast of Coronation Hill.

Access is by 4WD gravel track which turns off the road to Koolpin Gorge approximately 0.5 km past the crossing of the South Alligator River. The track was the previous haul road for the mine, and at present is trafficable to within 150 m of the open cut. Access into the open cut is limited by washouts.

Dumps at either end of the open cut have contaminated the ground surface to the east and west.

At the time sampling was carried out at Saddle Ridge in September 1985, the open cut contained water. Water lines around the walls indicated the level of water fluctuated, probably according to season. It is not known if water overflowed in the wet season, but 8 m of water were recorded in the open cut in 1970.

Exploration at Saddle Ridge Open Cut may be hampere by this water which is almost certainly contaminated.

Reconnaissance sampling was carried out at Saddle Ridge Open Cut in September 1985, in accordance with instructions from the Coronation Hill Joint Venture.
1.1 TENEMENTS

The area of Saddle Ridge Open Cut is covered by two Mineral Leases, MLN 24 and MLN 25 (see Figure 2).

1.2 HISTORY

The uranium deposit at Saddle Ridge was discovered in late 1954 or early 1955 by United Uranium N.L. (U.U.N.L.) by random traversing of the area with ratemeters. Secondary uranium minerals occurred in outcrop on the prospect, and the company excavated shallow trenches across the line of lode. At this time, it was discovered that the prospect lay in the Commonwealth Reserve which surrounded Coronation Hill and the B.M.R. took over the prospect. The U.U.N.L. costeans were deepened, and two diamond drill holes were drilled on what was then called the B.M.R. No. 2 Prospect. The first drill hole passed through a gap in the orebody and the second drilled beneath it. On the basis of the drilling results, the B.M.R. abandoned the area which was taken up by U.U.N.L. again.

The company drilled a pattern of vertical wagon drill holes over the prospect and outlined the orebody. A 59 ft (18 m) shaft was sunk on the orebody, and two short development drives were put in on the 59 ft (18 m) level. The deposit was subsequently mined by open-cut methods.
2. GEOLOGY AND MINERALIZATION

The geology and mineralization at Saddle Ridge Open Cut is recorded by Taylor (1968):

"Saddle Ridge has the distinction of being the only orebody in the South Alligator valley which was composed almost wholly of secondary uranium minerals. Shepherd and Grenning (1961) mention the occurrence of sooty pitchblende and primary mineralisation was intersected by a diamond drill hole some 280 ft below the surface. The orebody appears to have been controlled by an east-west reverse fault which brings a block of bleached Koolpin Formation shales into contact with volcanics of the Kombolgie Formation. Mineralisation occurs mainly in the shales. The bulk of the uranium is thought to have been derived from a primary deposit associated with the unconformity but subsequently destroyed by erosion. The theory of supergene origin is supported by the absence of gold from the ore.

Total production amounted to 29,900 tons at 5.5 lb U₃O₈/ton from an orebody measuring 200 ft along strike and 100 ft in depth."

These production figures rate Saddle Ridge Open Cut the fourth largest mine in the South Alligator Valley based on reserves; however actual production figures are not available.

All ore was mined by open cut.

Detailed mapping of the open cut was reported on by Collings (1970), and this mapping (modified) is presented as Plate 1. The mapping interprets the geology at the open cut to be pale coloured shales of the Koolpin Formation reverse thrust on breccia of the Coronation Member, overlain by Pul Pul Rhyolite (see Plate 1). The fault is seen as controlling the mineralization.
In the text, it is noted that the Coronation Hill Member and the Kombolgie Formation are lithologically similar, but are separated by the Pul Pul Rhyolite. Faulting was recorded as the dominating structure feature of the area with faults occurring as broad zones of shearing and fracturing. The strike of major faults was east-west, with the strike of subsidiary faults, north-west/south-east.
UPPER PROTEROZOIC

Kombolgie Formation
- Conglomerate, quartz sandstone

Pul Pul Rhyolite Member
- Coarse conglomerate interbedded with sandstone lenses

Coronation Member
- Siliceous and haematitic breccia
  massive white breccia

LOWER PROTEROZOIC

Koolpin Formation
- Cherty-ferruginous siltstone
- Pale coloured shales
- Silicified limestone
3. **EXPLORATION PROGRAMME**

Reconnaissance rock-chip sampling was carried out along the length of the wall of the Saddle Ridge Open Cut, and additional samples were taken from the wall. Sampling was concentrated on the southern wall because the siltstones in outcrop there were recorded as hosts for uranium mineralization.

Rock-chip samples consisted of a collection of approximately 2.5 cm square fragments collected at 25-30 cm intervals over 10 metres.

Samples were prepared according to the standard preparation method for the Coronation Hill Joint Venture 1985 programme by Analabs Darwin (see Appendix 1), and were analysed for gold only (FA 50 method) by Pilbara Laboratories Perth.
4. RESULTS

Twelve rock-chip samples collected from the Saddle Ridge Open Cut all returned analytical results for gold at, or less than the detection limit for gold analysis (0.005 ppm Au), except for one sample which returned 0.012 ppm Au. This result is not significant in terms of economic gold mineralization. The sample was not observed to be altered or mineralized.
5. CONCLUSIONS

Rock-chip sampling carried out in the Saddle Ridge Open Cut was adequate to test the local area for economic gold mineralization.

Results indicated that the open cut was not prospective for economic gold mineralization.

It appears likely that the Saddle Ridge Open Cut is a supergene uranium deposit, possibly derived from a previously existing nearby unconformity deposit. Uranium has been transported into the fault zone environment of the open cut, but other metals, particularly gold, have not.

A similar situation appears to occur at Scinto VI Open Cut which also appears to be a supergene uranium deposit devoid of economic gold mineralization.

It may be a waste of exploration resources to continue testing uranium deposits of wholly secondary minerals for gold mineralization.
6. RECOMMENDATIONS

. No additional sampling of the Saddle Ridge Open Cut is necessary.

. Primary uranium mineralization intersected at depth beneath the open cut (see Hills, 1970) should be tested for gold mineralization.

. Nearby uranium mineralization/radiometric anomalies at Saddle Ridge South, Saddle Ridge East, Saddle Ridge East Extended and Saddle Ridge North-East, remain to be tested for gold mineralization.
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Report on Mapping Carried Out in the
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HILLS, J.H., 1970 -
United Uranium - Newmont - Electrolytic
Zinc - Geopeko Joint Venture; Saddle
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Origin and controls of uranium mineral-
isation in the South Alligator Valley.
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SAMPLE PREPARATION FOR SAMPLES
PREFIXED G18

AIR DRY ONLY

JAW CRUSH  HQ CORE  AX CORE  ROCK CHIP SAMPLES
8kg      2kg      2kg

|                  | DARWIN
HAMMER MILL

|                  | DARWIN
SPLIT 2kg

|           | PERTH
DISC GRIND (#80 mesh)

|   | PERTH
SPLIT 200g

|   | PERTH
RING GRIND (#200 mesh)

|   | PERTH
ANALYSE

SAMPLES MAY BE RADIOACTIVE

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9/8/85