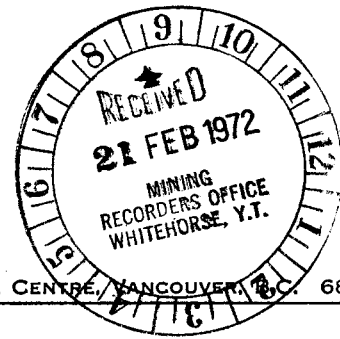


ARCHER, CATHRO
AND ASSOCIATES LTD.
CONSULTING GEOLOGICAL ENGINEERS



Box 4127, WHITEHORSE, Y.T. 667-4415


BENTALL CENTRE, VANCOUVER, B.C. 688-2568

1475 TWO BENTALL CENTRE
555 BURRARD ST.
VANCOUVER 1, B.C.

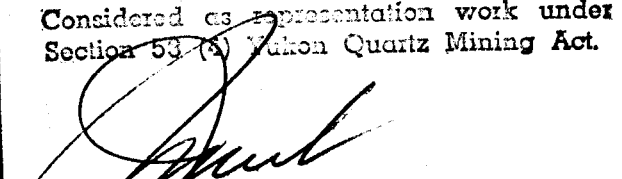
CHIEFTAN HILL
COPPER PROSPECT
RACA 1-14 Claims; Grant No's. Y60268-60281
Whitehorse Mining District, Y.T.

Wheaton River 105°03'
Latitude 60°11'
Longitude 135°28'

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$509.60


Resident Geologist or
Resident Mining Engineer

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.


Commissioner of Yukon Territory



February 7, 1972

A.R. Archer

Consultant

Vancouver, B.C.

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ILLUSTRATIONS

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INTRODUCTION

On August 24, 1971, reconnaissance geological mapping and sampling was carried out on the Raca 1-14 claims by M.P. Phillips, geologist with Archer, Cathro & Associates Ltd., Whitehorse, and D. Waugh, geologist with International Mine Services, Whitehorse. Access was by helicopter charter from Whitehorse.

PROPERTY LOCATION AND ACCESS

The Raca 1-14 claims, record numbers Y60268-60281, are owned jointly by Secord Investments Ltd. and Laura Development Ltd. of Vancouver. The expiry date on the claims is February 7, 1972.

The Raca Group is located forty miles south of Whitehorse. Carcross, the closest settlement, is twenty-five miles east. The claims cover a copper showing exposed on a south facing cliff just below the undulating to flat top of Chieftan Hill at an elevation between 5000 and 5550 feet (see Figure 1 on the following page). A thirty mile road suitable for 4 wheel drive vehicles which leaves the Carcross-Alaska Highway at the White Pass and Yukon Route Railway station of Robinson could provide access to the property by a minimum of upgrading and reconstruction of a bridge at Mile 18.

A bush airstrip, built by Yukon Antimony, near the junction of Becker Creek and Wheaton River could be upgraded for use by small aircraft.

HISTORY

Prospecting has been active in the Wheaton River area since the turn of the century. The first published description of copper on Chieftan Hill is by Wheeler in Memoir 312 who states native copper was found in breccia on the southwest face of Chieftan Hill. This doesn't appear

FIGURE 1

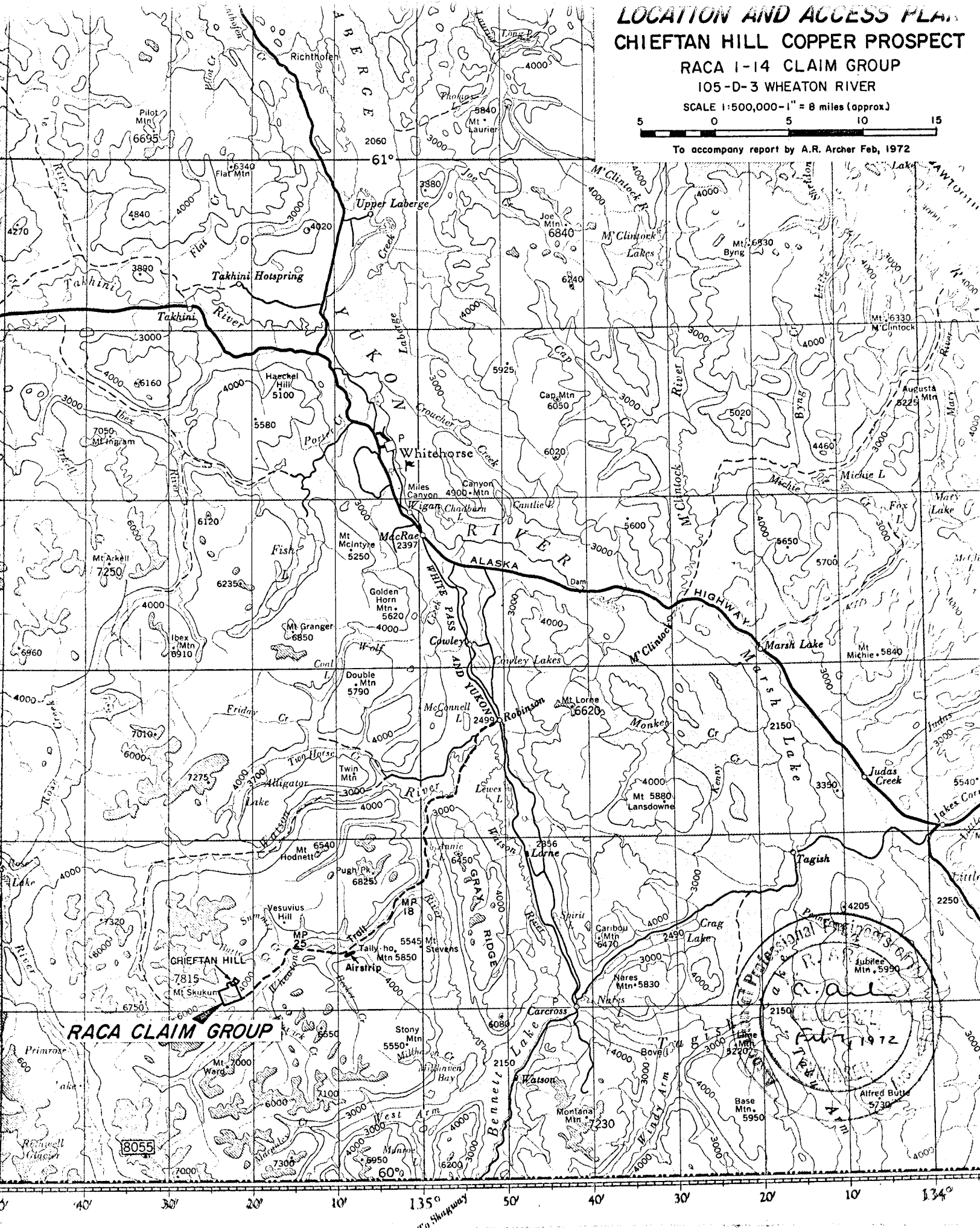
LOCATION AND ACCESS PLAN CHIEFTAN HILL COPPER PROSPECT

RACA 1-14 CLAIM GROUP
105-D-3 WHEATON RIVER

SCALE 1:500,000-1" = 8 miles (approx.)



To accompany report by A.R. Archer Feb, 1972



RACA CLAIM GROUP

8055

Professional Engineers of R.A.A.
Feb 1972
Alfred Butte 5730

to be the same showing as the Chieftan Hill copper prospect which was first staked by Yukon Antimony in 1966.

Yukon Antimony carried out mapping and sampling and during 1967 conducted an IP survey and outlined an anomaly north of the showing. One hole (750 ft.) drilled on the IP anomaly intersected pyrite mineralization and a second hole located below the showing was abandoned at 160 feet due to drilling problems.

Yukon Antimony allowed the claims over the showing to lapse and these were restaked by the present owners in early February 1971.

GEOLOGICAL SETTING AND MINERALIZATION

General

The regional setting consists of Cretaceous Coast Range granodiorite which has been intruded by acid to basic breccias, tuffs and lava of the Tertiary Skukum group. The contact between the two formations consists of a copper mineralized granodiorite breccia. These three main rock types are described in greater detail as follows (see Figure 2 in pocket).

1. Granodiorite - Medium to coarse grained grey equigranular granodiorite with biotite the predominant mafic mineral.
2. Granodiorite Breccia - Fine to coarsely brecciated altered and mineralized granodiorite. The contact with the Skukum group is a well defined flat dipping fault.
3. Skukum Group - The basal unit consists of rhyolitic slightly rusty breccias and tuffs containing angular to rounded fragments up to five feet in diameter of acid to basic purple, pale to dark green, volcanic rocks. The basal unit is overlain by a dark purple to green andasite which forms a flat capping on Chieftan Hill. Pyrite present in both units has weathered

to produce a reddish-brown gossan.

MINERALIZATION

Mineralization is restricted to altered granodiorite breccia exposed along strike for about 1200 feet. The down dip exposure of the breccia varies in width from 50 to 400 feet. The variable width is due to the hill slope and flat dip of breccia roughly dipping in the same direction. True width of the breccia zone is about 50 feet. The breccia weathers as a series of castellated ridges at right angles to the slope separated by scree gullies where erosion has cut through to the Skukum group.

The contact with the Skukum group is a sharp fault plane which strikes S 50° W and dips 40° to the southeast. A number of strong faults are present in the breccia. The apparent strike of the breccia zone is more westerly due to the steep hill slope. The breccia consists of fine to 1/2 inch angular fragment near the contact with the Skukum Group. Away from the contact the fragments become more rounded and increase in size to two inches in diameter. Alteration and mineralization is better developed in the finer, more angular, breccia which is best developed in the northeast corner of the zone. The breccia contains weak to moderate hydrothermal alteration consisting of silicification, chloritization of biotite, biotitization of hornblende, and plagioclase altered to sericite and carbonate. Carbonate along fractures is common in the brecciated granodiorite and in the Skukum Group near the contact. Petrographic examination by B.A. Edmond (see appendix) confirms the field observations of alteration. In porphyry terminology alteration development is in the K-feldspar facies.

Chalcopyrite and pyrite are found in the interstices of the fragments in a ratio of about 2:1. The sulfide content is irregular but generally

better developed in the finer breccia near the contact with the Skukum group. Secondary copper minerals, malachite, azurite and possibly tenorite are common along fractures. Four chip and grab samples (see Figure 2 in pocket for location) were collected and assayed at Whitehorse Assay office with the following results:

<u>Sample No</u>	<u>% Cu</u>	<u>Type of Sample</u>	<u>Remarks</u>
WR1	0.73	Composite chip - 50 ft.	representative
WR2	4.88	Selected grab	strongest mineralization
WR3	0.02	Grab	weak mineralization
WR4	0.10	Composite chip- 600 ft.	weak mineralization

The average grade of the entire zone is thought to be between 0.1 and 0.5% copper.

SUMMARY AND RECOMMENDATIONS

The Chieftan Hill Copper prospect is a narrow flat dipping copper mineralized breccia zone located at the contact of the Coast granodiorite intrusion and the Tertiary Skukum Group.

The breccia zone appears to have a limited tonnage potential and marginal copper grade. Further exploration should be directed towards testing the possibility of a better mineralized breccia extending under the scree below the showing. This possibility is illustrated on the cross-section on Figure 2 in the pocket.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.



A.R. Archer, P.Eng.

Statement of Expenditures
Chieftan Hill Copper Prospect

Labour

D. Waugh 1 day @ \$100 per
M.P. Phillips 1 day @ \$11 per \$200.00

Transportation

Trans North Turbo Air, Daily Flight Report No 94 Helicopter
206-A CF CEH 1/2 hrs. @ \$248 per 297.60

Assaying

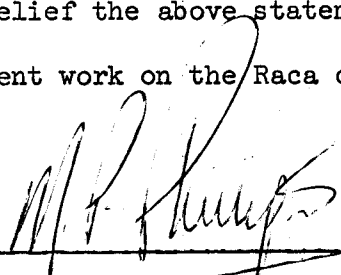
Whitehorse Assay Office, File No. 6956-15 12.00

Total - \$509.60

AFFADAVIT

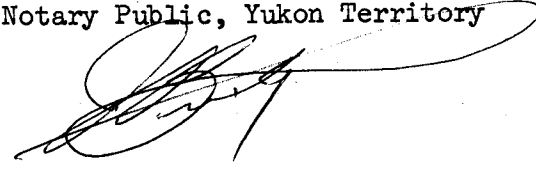
I, Michael P. Phillips of Whitehorse, Y.T. hereby make oath and say:

That to the best of my knowledge and belief the above statement of expenditures, to be applied as assessment work on the Raca claims is true and accurate.



M.P. Phillips

Sworn and subscribed to at
Whitehorse this 21st
day of Feb 1972.

Notary Public, Yukon Territory


To: J.L. Tindale, D. Waugh
FROM: B.A. Edmond
RE: Petrographic examination of specimens from the Chieftan Hill copper prospect. Raca 1-14 claim group, Yukon.

At the Chieftan Hill prospect an elongate body of granodiorite "breccia" 300 to 500 ft. wide by 1200 ft. long intrudes Skookum Group volcanics at or near the body of a granodiorite intrusion (Archer, Cathro & Assoc., fig.2). Copper sulphide mineralization occurs in the breccia.

The following specimens were examined:

- WR.4 is an extremely fine grained, partially recrystallized finely bedded leucocratic ash presumably from the Skookum Group.
- WR.1 shows highly shattered coarse granodiorite consisting of anhedral quartz and subhedral plagioclase (oligoclase-andesine). The feldspar is sericitized and original ferromagnesian altered to biotite, chlorite and a little carbonate. The interstices of the breccia appear to be injected with a fine grained mafic feldspar porphyry consisting of subhedral plagioclase, untwinned alkali feldspar and much biotite and sericite with minor sulphides.
- WR.2 is a porridge of altered granodiorite fragments and stained quartz chips in a paste of chloritized biotite and sulphides (mainly pyrite) evidently of metasomatic origin.
- WR.3 consists of a coarse grained, chloritized and sericitized granite or granodiorite which has been irregularly fractured. The secondary minerals are mainly developed along the fracture surfaces and associated with some sulphides suggesting a hydrothermal origin.

Specimens WR1-3 apparently all are from the granodiorite breccia unit. They could represent a hybrid contact phase of the granodiorite but texturally suggest a crypto-explosion event. This feature coupled with the moderate to intense alteration (including biotitization subsequently retrograded) and copper-bearing sulphides is found in certain "porphyry copper" deposits. The breccia body is probably steeply dipping and not a fault banded recumbent slice as shown by Archer, Cathro..

TRANS NORTH TURBO AIR LTD.

BOX 1977 PHONE 668-2177
WHITEHORSE, YUKON

TO:

International Mine Services Ltd.
Box 1052
Whitehorse, Yukon

Date: August 31, 1971

Invoice No. 649-71

P.O. No.

TO: Charge you with the following helicopter charters:

Bell 47G-3B-2 Helicopter CF-QJY
Crew: Plaster & Domonkos

FLYING: August 9 & 10, 1971
Daily Flight Report No. 9091 & 9093

9.7 hours at \$155.00 per hour \$1,503.50
(rate when carrier supplies fuel)

0.7 hours at \$144.00 per hour 100.80
(rate when charterer supplies fuel)

PLUS: Excess fuel cost at following points
Charterer assessed with cost of fuel
over \$.60 per gallon

Carmacks

85 gallons at \$.40 per gallon \$34.00

Minto

78 gallons at \$.46 per gallon 35.88 69.88

PLUS: Bell 206-A Jet Ranger Helicopter CF-CEH
Pilots: Dunbar & Drzymala

FLYING: August 3 & 24, 1971
Daily Flight Reports No. 62 & 94 — 1.2 hrs.

2.4 hours at \$248.00 per hour $248 \times 1.2 = 297.60$ 595.20
(rate when carrier supplies fuel)

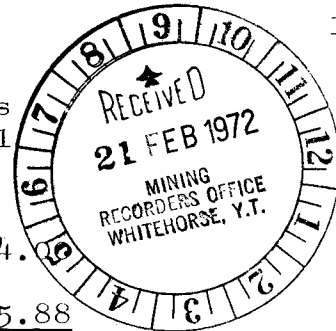
PLUS: Excess cost of fuel at Pelly Crossing
Charterer assessed with cost of fuel over
\$.60 per gallon

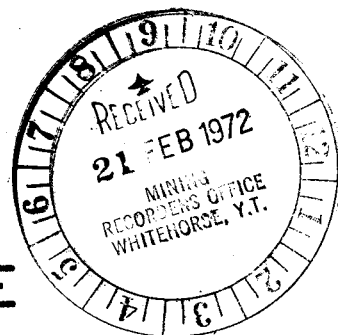
25 gallons at \$.70 per gallon 17.50

INVOICE TOTAL

\$2,286.88

TERMS: One per cent interest per month will be charged
on all invoices not paid within 30 days of date
issued.





ASSAY CERTIFICATE

WHITEHORSE ASSAY OFFICE

P.O. BOX 346. WHITEHORSE. YUKON

DATE Aug. 27/71

FILE NO. 6956-15

RECEIVED FROM INTERNATIONAL MINE SERVICES

SAMPLE NO.	LEAD	ZINC	Copper				
<i>Race</i> WR-1			.75				
WR-2			4.88				
<i>Claims</i> WR-3			.02				
WR-4			.10				
WT-1			.06				
WT-2			.14				
<i>Claims</i> WT-3			.04				
WT-6			.32				
WT-7			.14				
WT-8			.01				
WT-9			.20				
WT-11			.01				
WT-12			.02				
WT-13			.02				
WT-14			.06				

ASSAYER Geo. Walden



LEGEND

- TERTIARY or EARLIER**
- Skukum group
 - Andesite, rhyolite, breccia tuffs & flows
 - Breccia-granodiorite

- CRETACEOUS COAST INTRUSION**
- Granodiorite
 - Scree-skukum group
 - Outcrop - approx.
 - Fault trace breccia.

CONTROL Horizontal - Pace and compass
Vertical - Thommen altimeter & DDH 1 assume 5800ft.

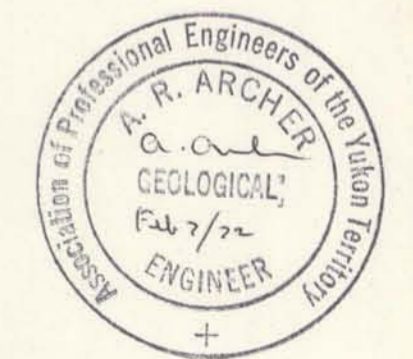
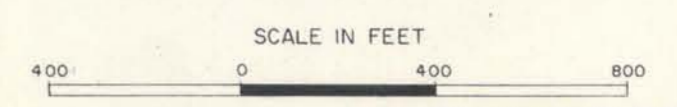


FIG 2

ARCHER, CATHRO & ASSOCIATES LTD.

**PLAN & SECTION SHOWING
CHIEFTAN HILL COPPER PROSPECT**

RACA 1-14 CLAIM GROUP
105-D-3 WHEATON RIVER



To accompany report by A.R. Archer Feb, 1972