

# ARCHER, CATHRO

AND ASSOCIATES LTD.

CONSULTING GEOLOGICAL ENGINEERS

WHITEHORSE, Y.T. 667-4415

6TH FLOOR, TWO BENTALL CENTRE, VANCOUVER, B.C. 688-2568

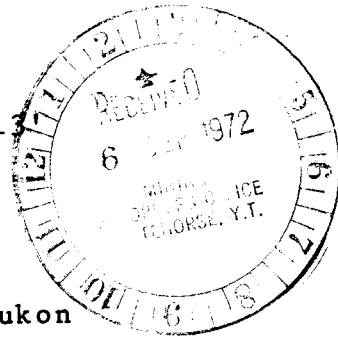
POST OFFICE BOX 4127  
WHITEHORSE, Y.T.

## REPORT ON

### GEOCHEMICAL SAMPLING AND GEOLOGICAL MAPPING

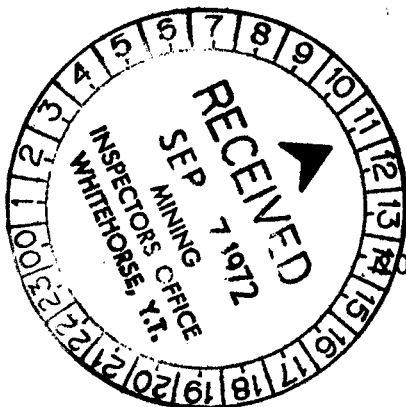
B 2-12, 17-40 and See 1-24 Mineral Claims

Latitude 62°40' Longitude 137°13'



Whitehorse Mining Division, Yukon

CONSOLIDATED STANDARD MINES LTD. (N.P.L.) 16,615



July, 1972

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 \$ 16,615

*D.B. Craig*  
Resident Geologist or  
Resident Mining Engineer

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

*[Signature]*  
Commissioner of Yukon Territory

Alan R. Archer

Consulting Geological Engineer

## TABLE OF CONTENTS

<u>In Text</u>	<u>Page</u>
Introduction .....	1
Property, Location and Access .....	1
Geology .....	2
Geochemical Sampling	
General .....	3
Technique .....	4
Interpretation .....	6
Conclusions and Recommendations .....	8

### Figures in Pocket

- Figure 1 - Claim Location Map - Scale 1"=1000'
- Figure 2 - Property Geology Map - Scale 1"=1000'
- Figure 3 - Soil Sample Location Number- Scale 1"=1000'
- Figure 4 - Geochemical Analyses - Scale 1"= 1000'

## INTRODUCTION

The exploration program on the B 2-12,17-40 and See 1-24 claims described in this report was done under contract by Archer, Cathro & Associates Ltd. for Consolidated Standard Mines Limited (N.P.L.) from July 2 to 8, 1972. Field men were K. Carswell, D. Eaton, D. Bruce and J. Dickinson and supervision was provided by the writer, A.R.Archer.

The objective of the program was (1) to determine the exact location of the B and See claims relative to the adjoining, previously staked Sun claims and (2) to explore the claims by grid soil sampling and geological mapping for copper mineralization similar to that found three miles southwest on property held by Silver Standard Mines Ltd. and United Keno Hill Mines Ltd.

## PROPERTY, LOCATION AND ACCESS

The property consists of 59 mineral claims recorded at Whitehorse, Yukon Territory, as follows-

<u>Claim Names</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
B 2-12	Y62827-Y62837	6 October, 1972
B17-40	Y62838-Y62861	6 October, 1972
See 1-24	Y62803-Y62826	6 October, 1972

The southernmost portion of the B claims was suspected to partially overlap the previously staked group of Sun claims (Grant No's. Y62699 to Y62722). Figure 1 illustrates the relative position of all claims as located in the field. The Sun claims were so poorly staked that only one set of posts, the corner of Sun 13 to 16 claims, could be found after considerable search. The overlap of the Sun claims onto the B claims has been

projected from this point assuming the Sun claims are staked to their maximum legal length. Thus the overlap should not be any greater and might be considerably smaller. Six of the B claims were found to have a minor overlap onto the United Keno Hill Mines DEF claim group. The Ori claims to the northwest were staked after the See claims.

Claim tags were attached to all of B and See claim posts including the overlapped claims. The claims were found to be well staked with claim lines easy to locate and follow. Accessibility is illustrated in the insert in the upper right hand corner of Figure 1. Minto, the nearest point on the Klondike Highway, is about 150 road miles from Whitehorse.

#### GEOLOGY

Figure 2 illustrates areas (about ten per cent of the claims) where outcrops were noted or where "near outcrop" irregular bedrock fragments were found in soil sample pits. The predominate rock type is a Jurassic or later granitic intrusion similar to that found on the United Keno Hill and Silver Standard properties. It is coarse grained with up to forty per cent quartz and ten per cent biotite and hornblende. Foliation, caused by alignment of the mafic minerals, is strongly developed in a northwesterly direction. A few outcrops exhibit quartz-rich banding parallel to the foliation. Aplite and simple pegmetite dikes with a high K-feldspar content are common. The quartz content of the intrusion diminishes from

a west to east direction. Weak alteration in the form of conversion of hornblende to chlorite and minor epidote veining is common. Several outcrops of dense, green, altered andesite found on the southeastern side of the property appear to represent a large area, possibly a roof pendant, of Triassic volcanics. Fragments of schistose hornblende-biotite rich rock, very similar in appearance to the mineral bearing zones at Dawson Range Joint Ventures property twenty-four miles to the southeast, were found in two soil sample pits near the centre of the southern portion of the claims. These and an area of granitic outcrop near the Triassic volcanic have weak limonite staining. No other evidence of mineralization was noted.

There is no sign of any significant Pleistocene glaciation. Topography is subdued and, except for several steep cuts where most of the outcrop is found, is almost featureless. Vegetation is mainly scrub spruce with minor poplar on south and western slopes. Two difficult to sample swampy areas occur in the southwestern portion of the B claims and these are outlined on Figures 3 and 4.

#### GEOCHEMICAL SAMPLING

##### General

The known mineralized areas southwest of the B and See claims consists of gneissic to schistose zones, within the Jurassic or later intrusion, that vary from a few feet to several hundred feet in width. They usually strike northwest and occur in sub-parallel groups. Mineralization consists

of bornite, chalcopyrite, chalcocite and traces of pyrite and molybdenite. Weathering results in conversion of copper sulfide to copper oxide with little change in grade. Mobilization of copper in groundwater is minimal and stream sediment sampling is ineffective unless the stream happens to cut across a zone. Soil sampling, however, has proven to be a very effective preliminary way of detecting mineralized zones through deep residual overburden, even in areas with an additional light cover of glacial till. A soil sample grid spacing of 400 feet by 400 feet on the known properties would have located all areas of interest. The best indicator metal is copper although weak associated silver and molybdenum values are occasionally obtained. Copper background in the district ranges from 10 parts per million (ppm) to 40 ppm, sometimes rising to 70 ppm in the Triassic volcanics. Threshold is about 40 ppm and values of at least 100 ppm and often more than 1000 ppm are obtained over or near mineralized areas, providing a strong contrast. Swampy or organic rich areas have a tendency to act as copper collectors and often return values 10 to 30 ppm higher than regional background.

#### Technique

The corner posts of the See 5-8 claims was chosen as zero north and zero east. A zero north tie line was chained (at right angles to the claim lines) southwest from this point

to establish zero points on the two remaining claim lines and then continued southwest until the United Keno Hill Mines claim line was located. The See and B claim lines were then designated Baselines A to C respectively from an east to west direction. Baseline A is zero on the tie line. Baseline B is 30W(3000 ft west) and Baseline C is 57W(5700 ft west). The baselines were chained north and south and three foot lath pickets established at 400 foot intervals. Each lath was marked with the appropriate co-ordinate in multiples of 100 feet. For example, a lath on Baseline B located 4000 feet north of the zero tie line would be marked BL B, 40N. The field position of claim posts was determined while chaining the baselines and the appropriate claim tag was affixed to each post. A chained tie line was established at 76N to determine the exact degree of convergence of Baselines A and B. Ground control was provided by government airphotos enlarged to 1000 feet to the inch.

Soil samples were taken at 400 foot intervals by pace and compass between the 400 foot stations on the baselines. Soil sample locations were marked with an 18 inch lath picket with the appropriate co-ordinate (i.e.- a soil sample picket 800 feet east of 40N on Baseline A would be marked 40N 8E ) and the soil sample bag number printed on the lath with a black felt marking pen. Figure 3 shows the soil sample bag number for each point and this map would provide the simplest method of relocating the relative position of any soil sample

picket in the field. The soil sample points on Figure 3 and 4 are shown as best possible in their true location. A pace and compass traverse that wandered slightly between baselines is drawn in a straight line from the starting position to the actual finishing position. The tie lines, baselines and soil sample lines were well marked with orange glow flagging.

Soil samples were obtained by digging to a B or B plus C horizon with a mattock. Samples were collected in pre-numbered Kraft envelopes and air expressed to Chemex Labs Ltd., North Vancouver, B.C. Each sample was assayed for copper, molybdenum and silver by atomic absorption spectrometry of a nitric-perchloric extraction of a minus 80 mesh fraction. Sample splits will remain in storage at Chemex for five years in the event that analyses for additional elements are required in the future. Occasionally, sample pits could not be dug to a B horizon due to a combination of permafrost and thick peat or black muck in swampy areas. These points are marked NS on Figures 3 and 4. A total of 676 samples were taken out of the theoretical maximum of 686 for a 400 by 400 foot spacing on 49 (59 less 10 overlapped claims) full size mineral claims.

#### Interpretation

Other than two swampy areas on the southwestern portion of the claims, soil sample conditions were good. Most of the samples were obtained from a B horizon that varied from a buff to red brown color. Samples near areas of outcrop were usually

obtained from a B plus C horizon. A typical soil profile is several inches of moss and/or organic debris underlain by one to twelve inches of peaty material above the B horizon. There was no evidence of the recent volcanic ash that occurs further south in the district.


Figure 4 illustrates soil sample analyses in parts per million. Only molybdenum and silver values that exceed the detection limit of less than 1 ppm molybdenum and less than 0.5 ppm silver are plotted. These are shown in brackets beneath the appropriate sample point. All copper assays are plotted and values above the threshold value of 40 ppm are contoured. With the exception of a single erratic anomalous molybdenum value at 800 east of Baseline A on line 7600 north, there are no silver or molybdenum values that approach threshold. There are no anomalous copper values and only a few areas where two or more adjoining sample points returned above threshold values. The above threshold values on the western portion of the claims occur in a swampy area downslope from the United Keno Hill claims and almost certainly represents copper enrichment by organic action. Although all the remaining above threshold values appear to be erratics, two areas would justify further investigation if the work could be done cheaply. These are the two values of 51 and 54 ppm (about 1200 feet east of Baseline B at 1600 south) which are near a sample pit where schistose float, mentioned under geology, was found and three adjoining values of 46, 52, and 64 ppm on

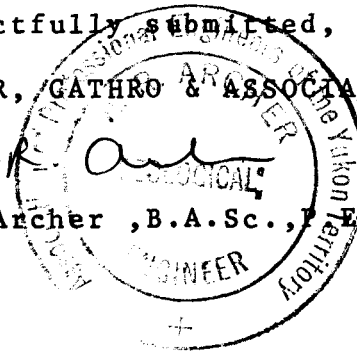
the southeastern claim boundary near line 4400 south.

CONCLUSIONS AND RECOMMENDATIONS

Neither geological mapping nor geochemical sampling has indicated evidence of significant copper mineralization on the B and See claims. Two areas with a weak copper geochemical response described under the previous heading, would each justify a single bulldozer trench only if a bulldozer presently working in the area was available for a day. The total cost including fuel mobilization and supervision should not exceed \$1,000.

Respectfully submitted,  
ARCHER, GATHRO & ASSOCIATES LTD.

  
A.R. Archer, B.A.Sc., P. Eng.



ARA:st

ARCHER, CATHRO  
AND ASSOCIATES LTD.  
CONSULTING GEOLOGICAL ENGINEERS

WHITEHORSE, Y.T. 667-4415

6TH FLOOR, TWO BENTALL CENTRE, VANCOUVER, B.C. 688-2568

POST OFFICE BOX 4127  
WHITEHORSE, Y.T.

In Account With  
Consolidated Standard Mines Ltd.  
July 22, 1972

Contract geological mapping and soil sampling  
the B2-12, 17-40 and See 1-24 claims less  
ten claims overlapped by Sun claims  
-total 49 claims @ \$135/claims .....\$6,615.00

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.

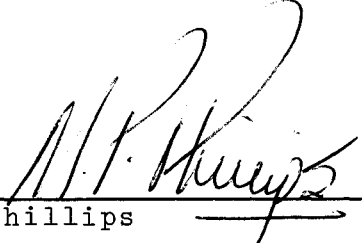


A.R. Archer

ARA:st

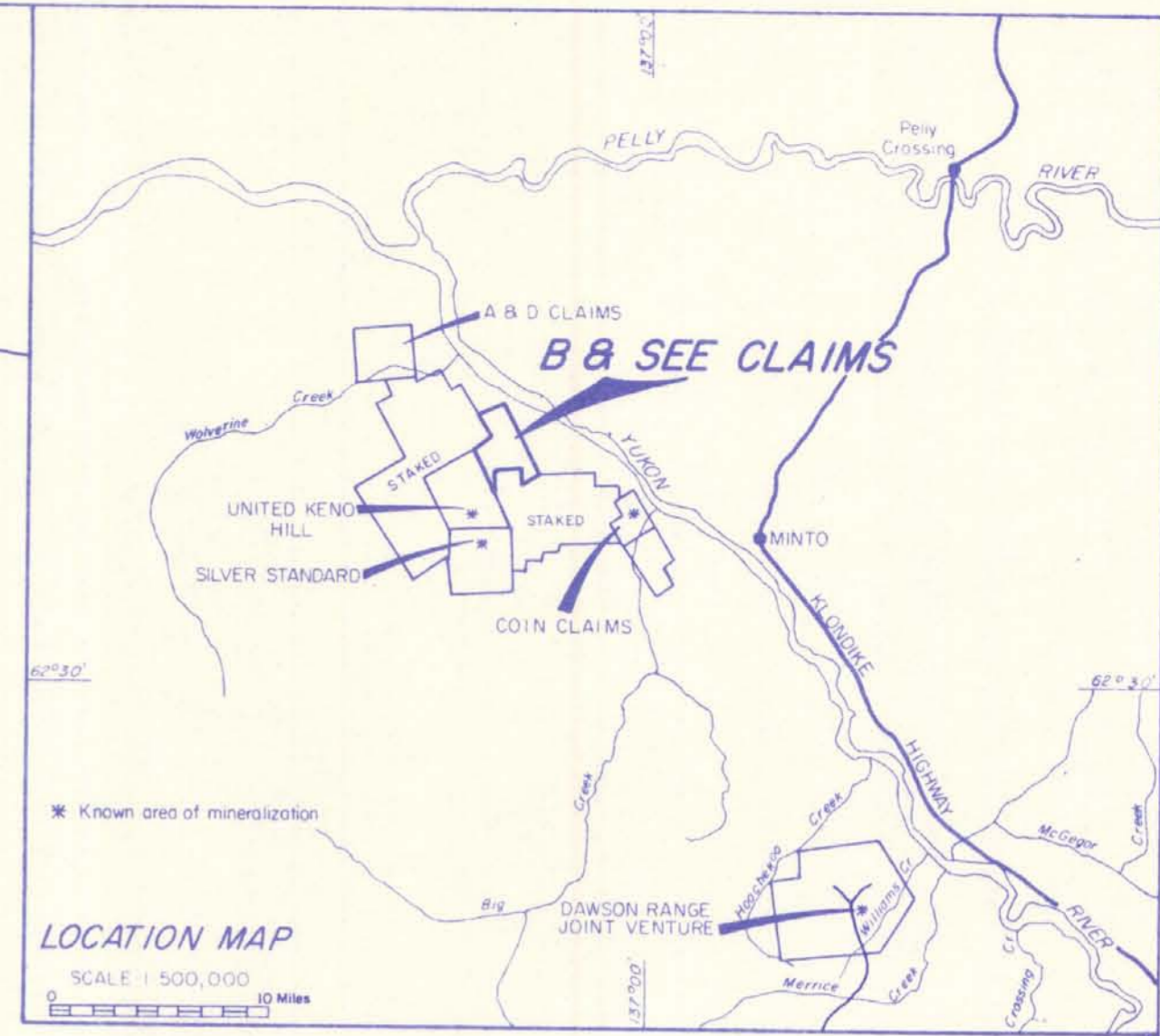
Affidavit

I, M.P. Phillips of Box 4127 Whitehorse make oath and say:-  
That to the best of my knowledge and belief the attached  
statement of expenditures on the Wain 1-64 mineral claims  
is true and accurate.

  
\_\_\_\_\_  
M.P. Phillips

Sworn and submitted to  
at Whitehorse this  
6 day of Sept.

  
\_\_\_\_\_  
Notary Public, Yukon



NRD MINING LTD.  
ORI CLAIMS



UNITED KENO HILL MINES LTD.  
DEF CLAIMS

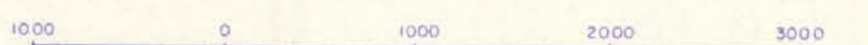
**LEGEND**

- CLAIM POST(S)
- PORTION OF B & SEE CLAIMS OVERLYING PREVIOUSLY STAKED CLAIMS



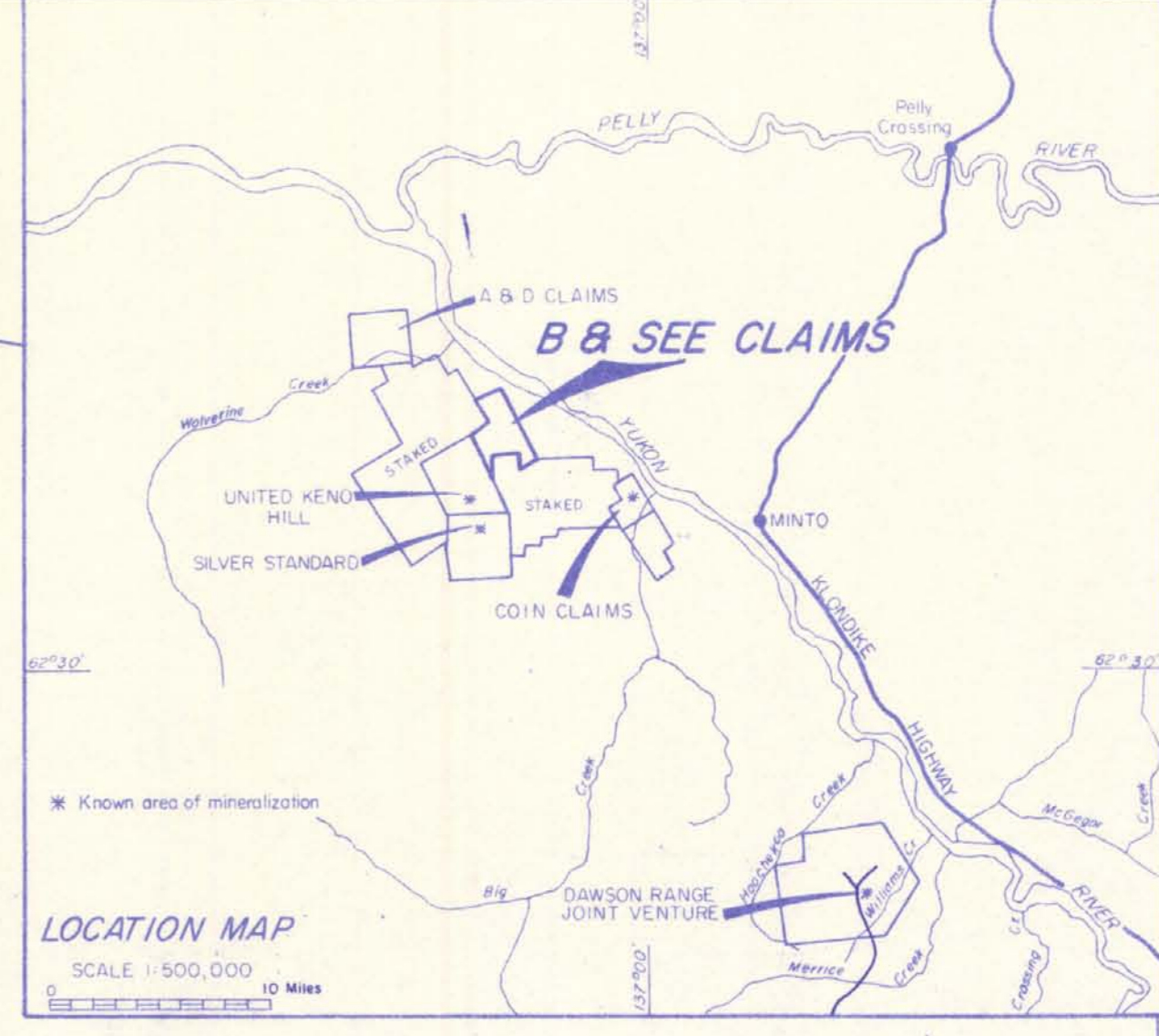
FIG 1  
ARCHER CATHRO & ASSOCIATES LTD.  
**CLAIM LOCATION MAP**  
CONSOLIDATED STANDARD MINES LTD.  
B 2-12, 17-40 AND SEE 1-24 CLAIMS  
MINTO AREA, YUKON

SCALE 1" = 1000'



DRAINAGE FROM AIRPHOTO ENLARGEMENTS

To accompany report by A. Archer dated July 20, 1972



<b>AGE</b>	<b>GEOLOGY</b>
JURASSIC OR LATER	GRANODIORITE (UNIT 10) - Coarse grained and biotite rich, up to 40% quartz. Apatite and pegmatite dykes common. Minor epidote veining.
TRIASSIC ?	MT. NANSEN VOLCANICS - Dark green, highly altered andesite

<b>LEGEND</b>
○ Area of outcrop, numerous outcrops or where rock fragments found in soil sample pits.
--- Estimated location of contact

NOTE - Geology unit numbers from G.S.C. map 340A by H.S. Bostock

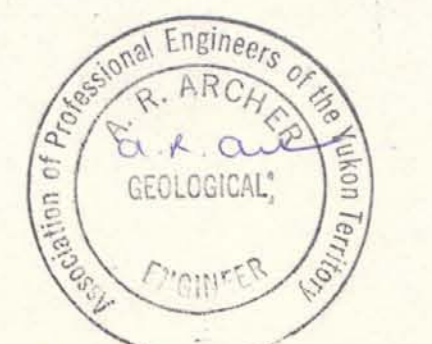


FIG. 2  
ARCHER CATHRO & ASSOCIATES LTD  
**GEOLOGY**  
CONSOLIDATED STANDARD MINES LTD  
B 2-12, 17-40 AND SEE 1-24 CLAIMS  
MINTO AREA, YUKON



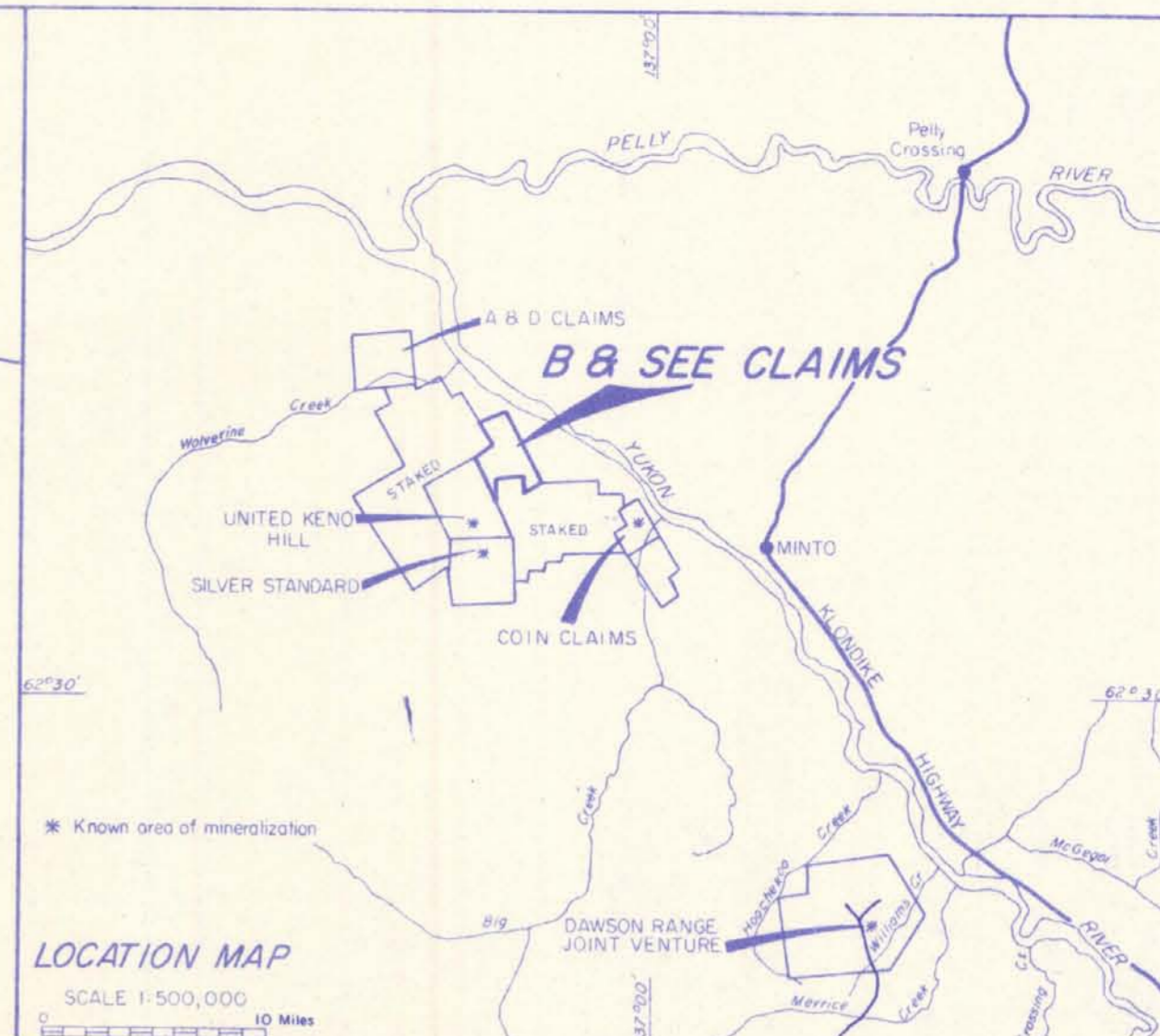
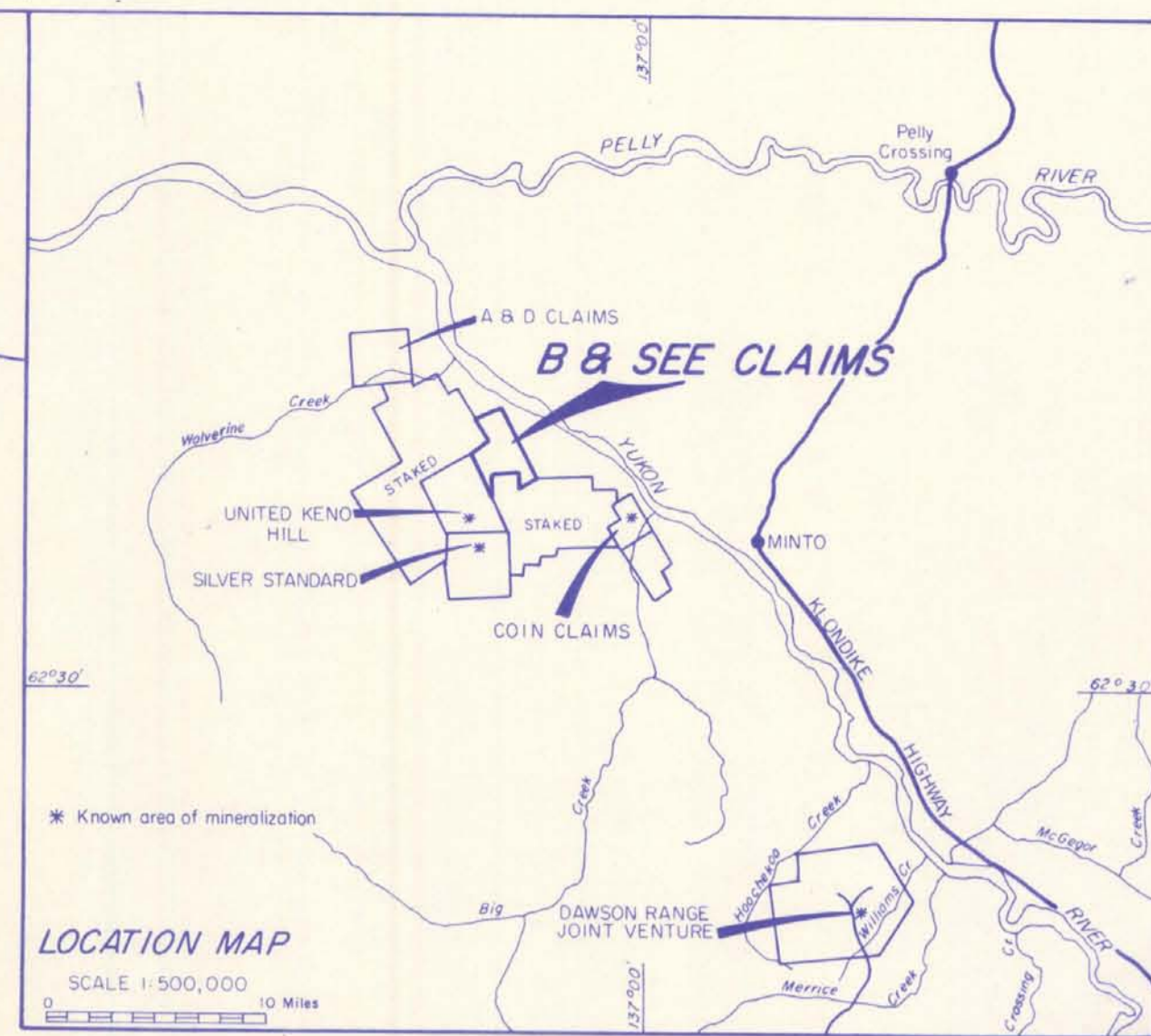


FIG 3  
 ARCHER GATHRO & ASSOCIATES LTD  
**SAMPLE LOCATIONS**  
 CONSOLIDATED STANDARD MINES LTD  
 B 2-12, 17-40 AND SEE 1-24 CLAIMS  
 MINTO AREA, YUKON

SCALE 1" = 1000'

DRAINAGE FROM AIRPHOTO ENLARGEMENTS

To accompany report by A. Archer dated July 20, 1972



**LEGEND**

- 25 Sample value for copper in parts-per-million
- 2.05 Sample value of molybdenum, silver in parts-per-million. All sample points with molybdenum and silver assays not shown assayed <1ppm molybdenum and <0.5ppm silver
- 10 5 Copper values above threshold for area
- - - Area difficult to sample

SAMPLES ASSAYED BY CHEMEX LABS LTD, NORTH VANCOUVER, analyses by atomic absorption spectrometry of a nitric-perchloric extraction



FIG 4  
 ARCHER CATHRO & ASSOCIATES LTD  
**COPPER, MOLYBDENUM & SILVER GEOCHEMISTRY**  
 CONSOLIDATED STANDARD MINES LTD.  
 B 2-12, 17-40 AND SEE 1-24 CLAIMS  
 MINTO AREA, YUKON

