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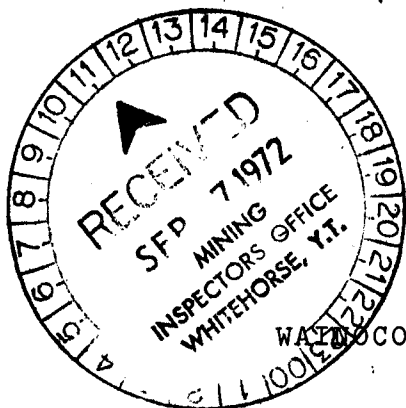
REPORT ON

GEOCHEMICAL SAMPLING AND GEOLOGICAL MAPPING

WAIN 1-64 CLAIMS

Latitude 62°38' Longitude 137°20'

WHITEHORSE MINING DIVISION, YUKON TERRITORY



for

WAINCO OIL LTD.

August 12, 1972

This report has been examined by the Geological Division Unit and is recommended to the Commission to be considered as representation work in the amount of \$8900

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
Administrator

Alan R. Archer

Consulting Geological Engineer

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Maps in Pocket

Figure 1 - Claim Location Map	Scale 1"= 1000'
Figure 2 - Property Geology Map	Scale 1"= 1000'
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INTRODUCTION

The Wain 1 to 64 claims were explored by grid soil sampling and geological mapping during the period July 12-19, 1972.

The program was done under contract by Archer, Cathro & Associates Ltd. for Wainoco Oil Ltd. The field crew consisted of K. Carswell, D. Eaton, D. Bruce and J. Dickinson and supervision was provided by the writer, A.R. Archer.

The purpose of the program was to explore for copper mineralization similar to that being developed three miles to the east by Silver Standard Mines Ltd. and United Keno Hill Mines Ltd.

PROPERTY, LOCATION AND ACCESS

The property consists of 64 mineral claims recorded at Whitehorse, Yukon Territory as follows-

<u>Claim Names</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
Wain 1-64	Y62176-Y62239	22 Sept., 1972

Figure 1 in the pocket illustrates the position of the individual claims as determined in the field. The Wain claims were staked in an east to west direction starting from the claim posts of the previously staked Sol claims, thereby eliminating any problem of overlap in this direction. The previously staked Comanche claims, that lie to the south, are shown on Figure 1 to have a slight overlap which is their position according to the claim map. However, a search of the area within 1500 feet of the Wain claim boundary failed to locate the Comanche claim line, either because of poor staking or because

they actually lie further south. In general, the Wain claims were poorly staked. The location lines were shortened and allowed to diverge at the western end, probably to avoid an area of deep muskeg. Also, the lines were not adequately marked and difficult to follow. The claim lines were used as sample lines during the soil sampling program and the metal claim tags affixed to the appropriate posts at the same time. Ground control was provided by government airphotos enlarged to 1 inch = 1000 feet.

The accessibility of the Wain claims is illustrated in the insert in the upper right corner of each figure. Minto, the nearest road point on the Klondike Highway, is about 150 road miles from Whitehorse.

GEOLOGY

Figure 2 illustrates areas where outcrop or "near outcrop" float is fairly abundant. The predominant rock type is a Jurassic or later intrusion similar to that which encloses the Silver Standard and United Keno Hill mineralized zones. The outcrops shown on the eastern and southeastern portion of the claims are well exposed and consist of moderately foliated, medium to coarse grained granite containing fifteen per cent biotite and hornblende, with biotite predominate. The remaining outcrops are mostly areas where "near outcrop" float

was found. Intrusive float varied from fine to coarse grained foliated granite, occasionally cut by aplite dykes. Strongly foliated hornblende-biotite gneissic to schistose float, very similar to the type of rock associated with mineralization on the known showings, was found in one soil sample pit in the north central portion of the claims. The western portion of the claims is underlain by Selkirk Series volcanics of Recent or Tertiary age. Only two outcrops are shown on the map but areas of frost boil float, even in the swamps, are abundant enough to define the contact with reasonable accuracy. The volcanics are composed of buff to red breccias and tuffs and dark brown to black vesicular basalts. These rocks are a relatively recent event and unconformably overlie the intrusion, probably with a thickness of less than 500 feet in this area. No mineralized float was found and no evidence of leached or oxidized mineralization was seen.

There is no evidence of major Pleistocene glaciation. However, the wide swampy valley along the western side of the claims has the appearance of an old river course. This might have been caused by temporary re-routing of drainage patterns due to Pleistocene ice blocking the Yukon River valley to the east. Topography is very subdued with a small rise in elevation out of the swamp at the east, followed by a gradual rise in elevation to the southeast. Swampy areas, some almost impassible,

cover about 30 per cent of the claims. Vegetation in these areas consists of scrub spruce tangles, thick moss and niggerheads. The drier ridges are covered by more open stands of mixed spruce, poplar and pine.

GEOCHEMICAL SAMPLING

General

The known mineralized areas southeast of the Wain claims consist 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 dipping about 30 degrees east. Mineralization consists of bornite, chalcopryrite, 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 ground water 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 800 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, with

threshold of about 40 ppm. Values of at least 100 ppm and often more than 1000 ppm are obtained over or near mineralized areas providing an unusually strong contrast. Swampy or organic rich areas sometimes act as copper collectors and will occasionally return values 10 to 30 ppm higher than regional background.

Technique

The corner posts of the Wain 30 to 42 claims was chosen as zero north and a chained tie line was run along the claim line. Three baselines, each 3000 feet apart, were established at right angles ($N30^{\circ}W$) to the tie line and chained north and south with footages marked on orange glow flagging in multiples of 100 or 200 feet. For example, a point 1600 feet south of the tie line along baseline C would be marked BL C, 16 S. After the distance between claim lines was determined, 3 foot lath pickets were established at three equidistant points between the baselines in order to divide the distance into 4 equal intervals for soil sampling. Assuming that claim lines were the exact legal maximum of 3000 feet apart this would result in soil sample lines at 750 foot intervals and allow each claim line to be used as a sample line. As can be seen on Figures 3 and 4, the net result, due to the poor staking, was soil sample lines varying from 500 feet to 900 feet apart and a few extra sample lines had to be added between the widely diverged claim lines to the south. The southern portion of baseline A was established at a slight angle to the other baselines to avoid a swampy creek valley.

Soil samples were taken at 200 foot intervals on the pre-established picked interval by pace and compass. Claim lines were chained while sampling to locate the exact distance between posts. Soil sample locations were marked with an 18 inch lath picket with an appropriate co-ordinate relative to the baseline worked from. For example, a soil sample picket on line 3500 north at 400 feet east of baseline B would be marked B 35N+4E. The soil sample bag number was also printed on each lath and these numbers are shown on Figure 3. This map would provide the simplest method of determining the relative position of any picket relocated in the field. A pace and compass line that wandered slightly between baselines is drawn in a straight line from the starting position to the actual finishing position. In several instances a sample line was purposely diverted to avoid swampy areas where only poor quality samples could be obtained. All lines were well marked with orange glow flagging. Printing on the soil sample pickets and on flagging along the baselines was done with black felt pen markers and should remain legible for three years.

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., where they were analysed 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. Samples from swampy areas vary from fair to poor quality because of the high organic content. Such areas are outlined with a dashed line on Figures 3 and 4. A total of 1012 samples were taken out of the theoretical maximum of 960 samples for an 800 foot by 200 foot spacing on 64 full sized claims.

Interpretation

Figure 4 illustrates copper assays in ppm. All samples, with the exception of a few values shown in brackets, assayed less than 1 ppm molybdenum and less than 0.5 ppm silver. There are no areas of anomalous molybdenum or silver values. The western side of the property shows numerous above-threshold copper values. Most appear to be explained by higher background in organic rich areas and most are in the portion of the property underlain by Carmacks volcanics. This is also the area that has the appearance of being an old river course, suggesting the possibility that the above-threshold values are caused by contamination from some upstream (southeast) source. The only exploration target is a northwest-trending linear zone, shown as Anomaly A on Figure 4, where above threshold values are found over a length of 3000 feet and a width of 200 to 600 feet. Although this anomaly is weak, it does occur in a portion of the property where there is no obvious organic enrichment and could be, at least partially, underlain by

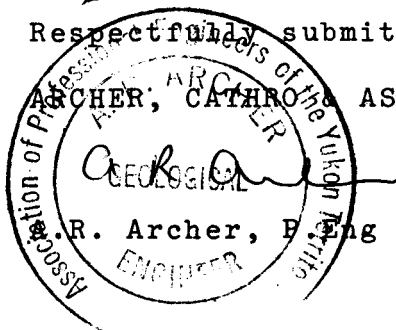
intrusive rocks.

CONCLUSIONS AND RECOMMENDATIONS

Most of the Wain claims are underlain by the same intrusive rocks in which the known mineralized zones are found. However, no major area of interest has been indicated by geological mapping or geochemical sampling. One linear area, called Anomaly A, of above-threshold copper values warrants bulldozer trenching to determine its cause. This work is only justified if a bulldozer is in the area and the program can be done for less than \$3,000.00.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.

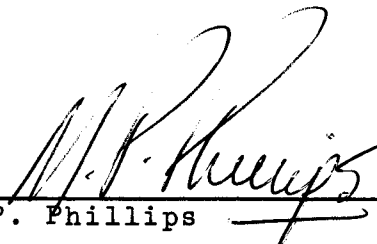


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Affidavit

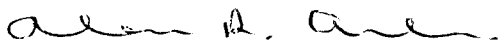
I, M.P. Phillips of Box 4127, Whitehorse make oath and say:-

That to the best of my knowledge and belief the attached statement of expenditures on the B 2-12, 17-40 and See 1-24 mineral claims is true and accurate.


M.P. Phillips

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


Notary Public, Yukon





NORTH CLAIMS

SOL CLAIMS

CENTRE AIRPHOTO A1206-120

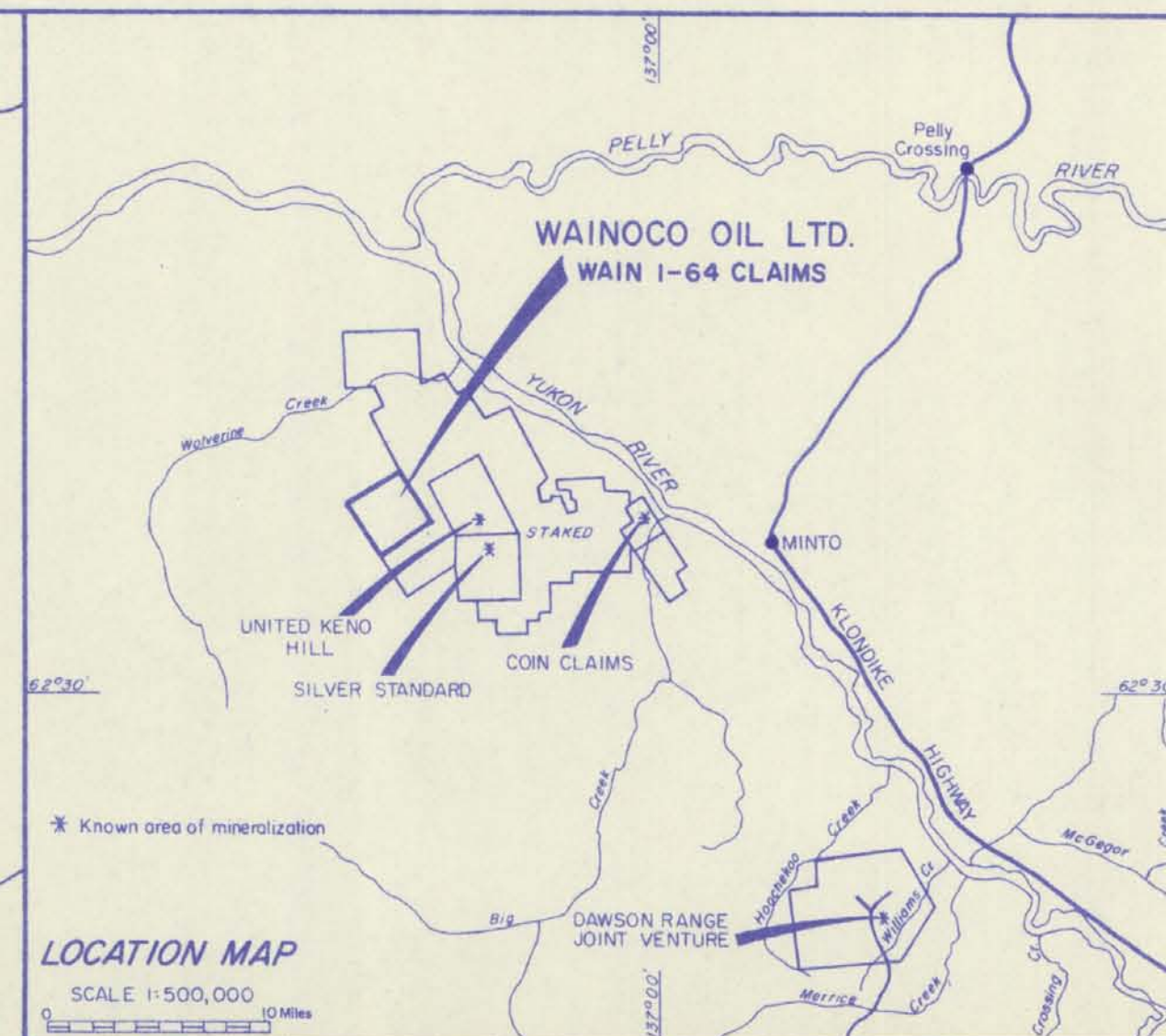
CENTRE AIRPHOTO A12259-343

UNITED KENO HILL MINES LTD.
DEF CLAIMS

SOL CLAIMS

SILVER
STANDARD
MINES LTD.
MINTO CLAIMS

PINNACLE MINES LTD.
COMANCHE CLAIMS



LEGEND

- CLAIM POST(S)
- PORTION OF WAIN CLAIMS OVERLYING PREVIOUSLY STAKED CLAIMS

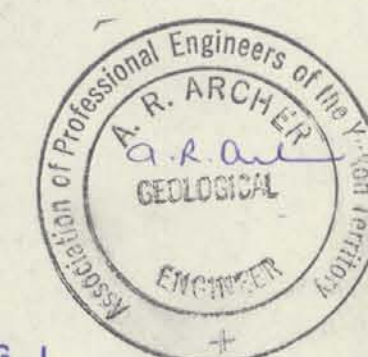
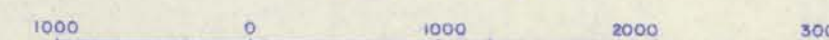
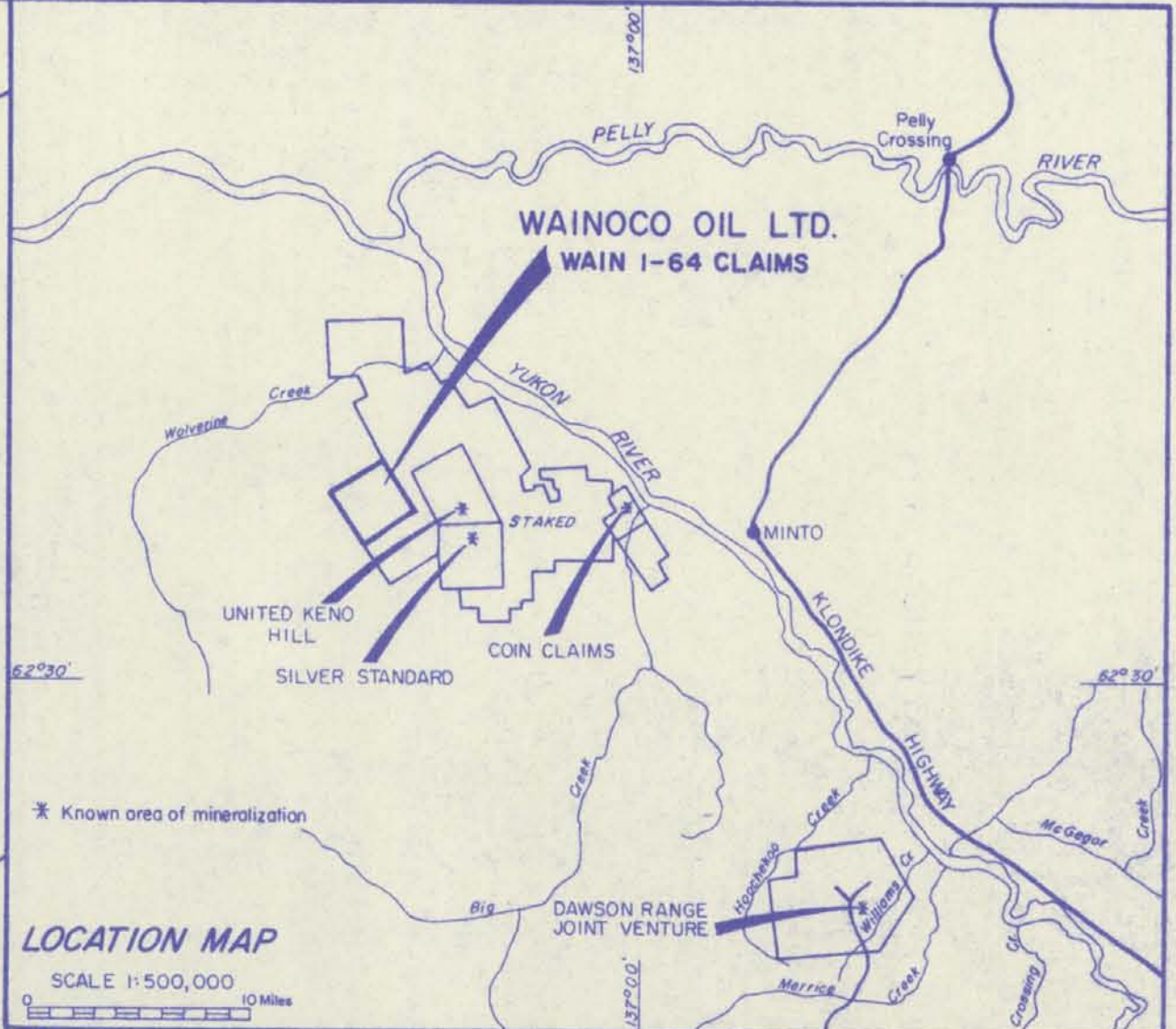
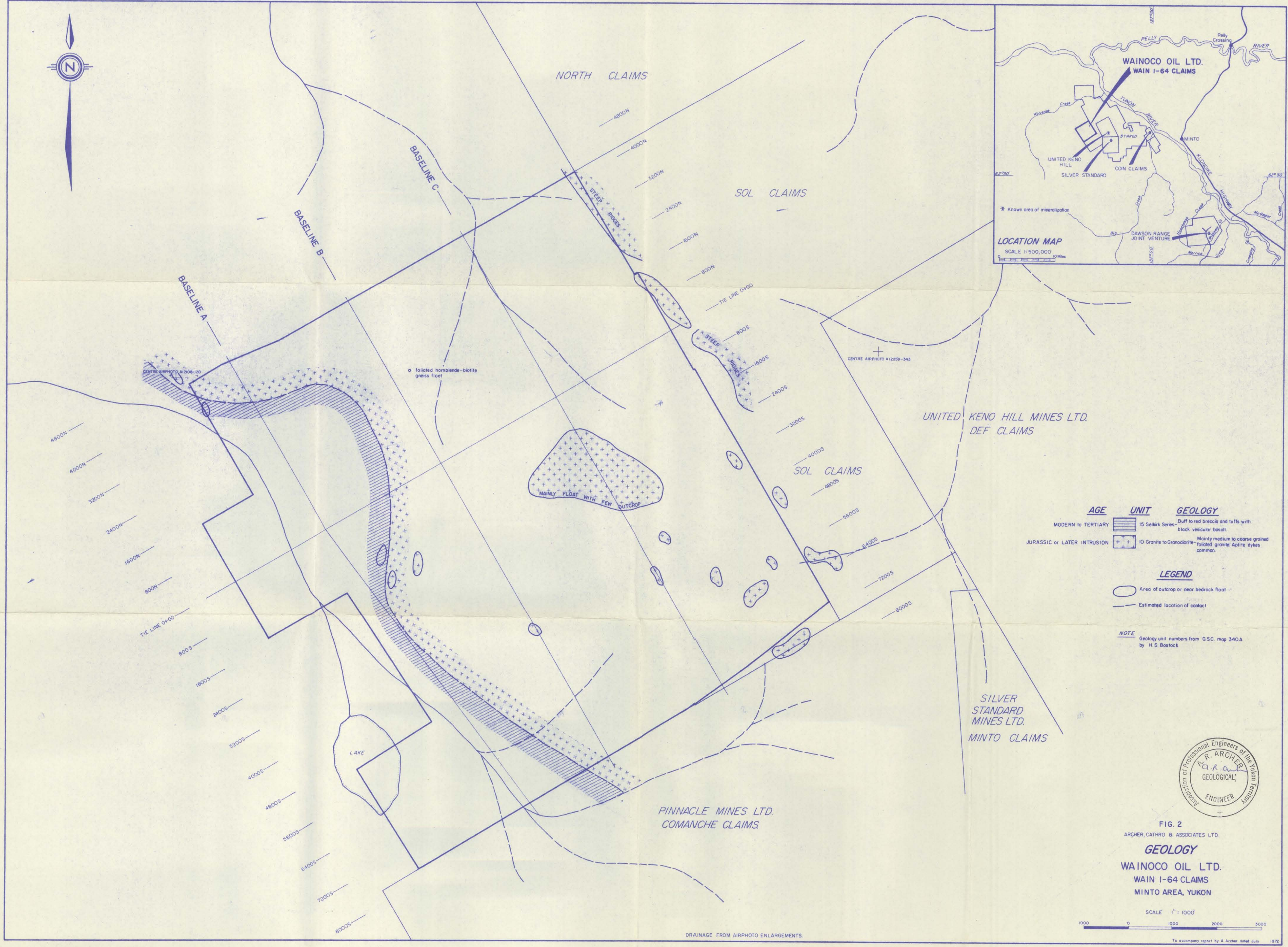


FIG. 1
ARCHER, CATHRO & ASSOCIATES LTD.
CLAIM LOCATION MAP
WAINOCO OIL LTD.
WAIN 1-64 CLAIMS
MINTO AREA, YUKON

SCALE 1" = 1000'



DRAINAGE FROM AIRPHOTO ENLARGEMENTS.



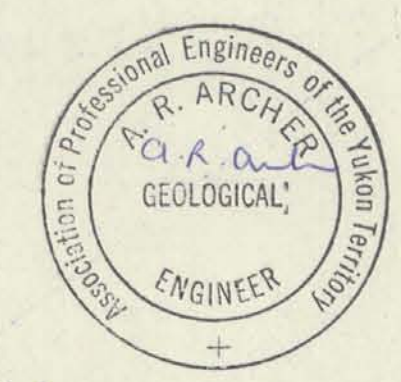
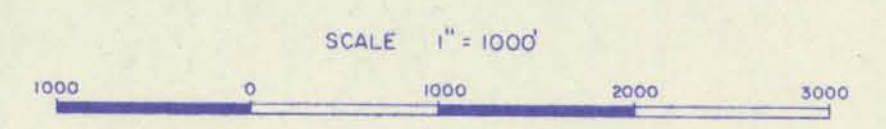
AGE	UNIT	GEOLOGY
MODERN to TERTIARY	15 Selkirk Series	Buff to red breccia and tuffs with black vesicular basalt.
JURASSIC or LATER INTRUSION	10 Granite to Granodiorite	Mainly medium to coarse grained foliated granite. Aplitic dykes common.

LEGEND

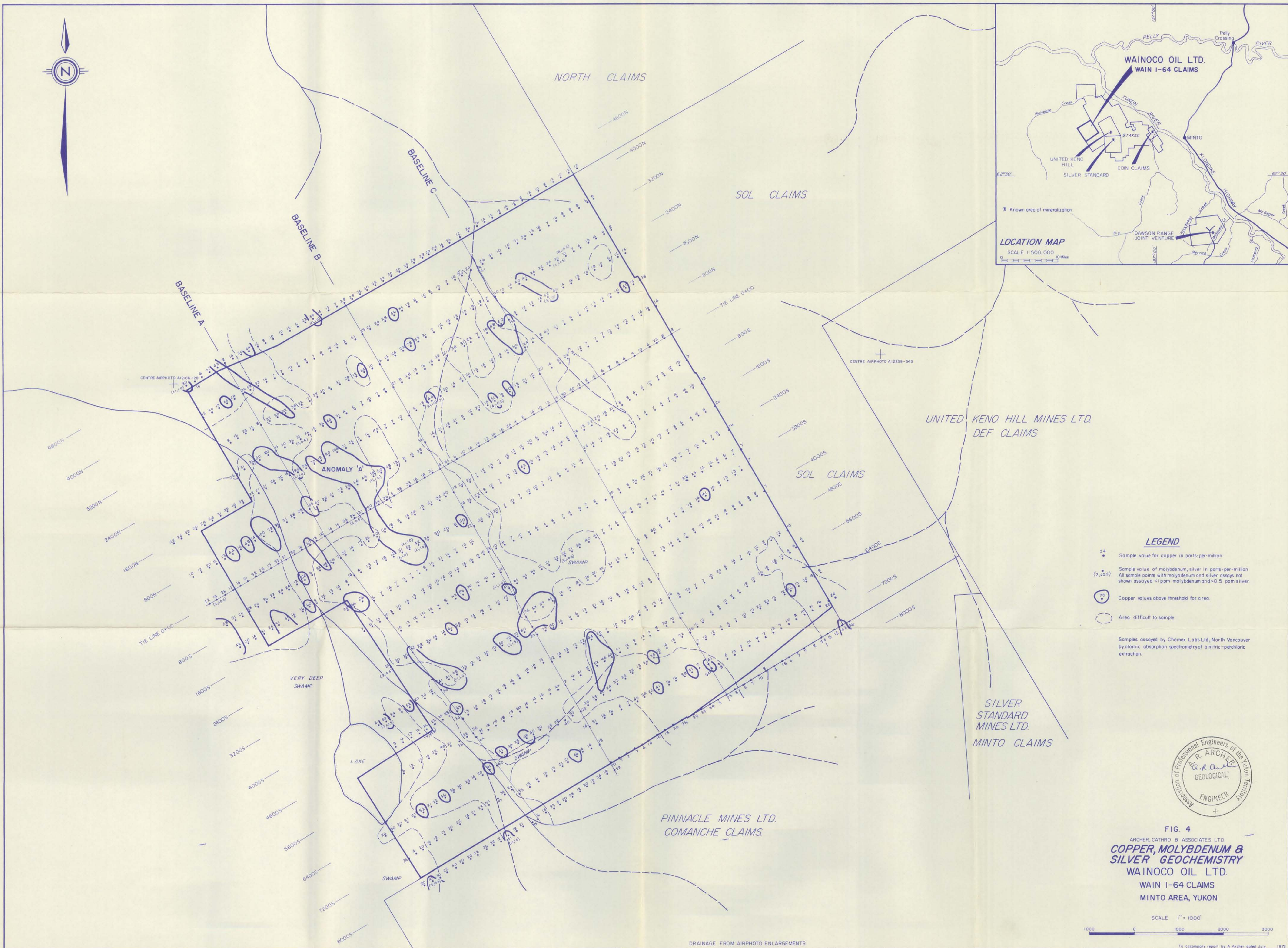
- Area of outcrop or near bedrock float
- Estimated location of contact

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

FIG. 2
ARCHER, CATHRO & ASSOCIATES LTD.
GEOLOGY
WAINOCO OIL LTD.
WAIN 1-64 CLAIMS
MINTO AREA, YUKON



DRAINAGE FROM AIRPHOTO ENLARGEMENTS.



LEGEND

- 24 Sample value for copper in parts-per-million
- (2,405) Sample value of molybdenum, silver in parts-per-million
All sample points with molybdenum and silver assays not shown assayed <1 ppm molybdenum and <0.5 ppm silver.
- 70 Copper values above threshold for area.
- Area difficult to sample

Samples assayed by Chemex Labs Ltd, North Vancouver
by atomic absorption spectrometry of a nitric-perchloric
extraction.



FIG. 4
ARCHER, CATHRO & ASSOCIATES LTD.
COPPER, MOLYBDENUM & SILVER GEOCHEMISTRY
WAINOCO OIL LTD.
WAIN 1-64 CLAIMS
MINTO AREA, YUKON

SCALE 1" = 1000'

1000 0 1000 2000 3000

DRAINAGE FROM AIRPHOTO ENLARGEMENTS.

To accompany report by A. Archer dated July 1972