

ASSESSMENT REPORT

SURFACE WORK

Geological Mapping and Geochemical Sampling

Mt. Skukum Area



CHIEF 72-106 CLAIMS

(YA74870 - YA74904)

091474

Whitehorse Mining District

N.T.S. 105 D/3

Latitude: 60° 13' N

Longitude: 135° 21' W

July 25th 1982 to July 25th 1983

R. A. Doherty
AGIP CANADA LTD.
27th July 1983

This report has been examined by
the Geological Survey of Canada
under Section 54 of the Mining Act
reporting that the amount
of \$ 7,000—

P. Watson
for Commissioner
of Yukon Territory.

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1. INTRODUCTION

1.1 General

The Mt. Skukum property consists of 477 contiguous quartz claims covering an area of 99.22 km² in the Wheaton River area of southwestern Yukon.

The property consists of the following claims (Figure 1):

<u>Claims</u>	<u>Staking Date</u>
KUKU 1-48	May 1981
KUKU 49-331	July 1981
CHIEF 1-71	November 1981
CHIEF 72-106	July 1981
WOOF 1-40	August 1982

In May of 1982, an assessment report was filed on the KUKU 1-48 and KUKU 48-331 claims with both claim blocks forwarded to common renewal dates of June 9th. An assessment report on CHIEF 1-71 was filed in November of 1982, and additional work was filed on KUKU 1-331 in May 1983.

This report describes surface work carried out on CHIEF 72-106 during the period July 25th 1982 through to July 25th 1983.

1.2 Location and Access

The Mt. Skukum property is situated in southwestern Yukon at 60°12' north latitude and 135°28' west longitude (NTS map sheet 105 D). The CHIEF 72-106 claims form the northeast corner of the claim block (Figure 2).

Whitehorse is 65 kilometers by air to the northeast. The southern boundary of the property crosses the south flank of Mt. Skukum, which forms a block of high ground between the Watson River to the north and the Wheaton River to the south. These rivers follow parallel courses, first to the northeast and then turn sharply south and drain into Bennett Lake.

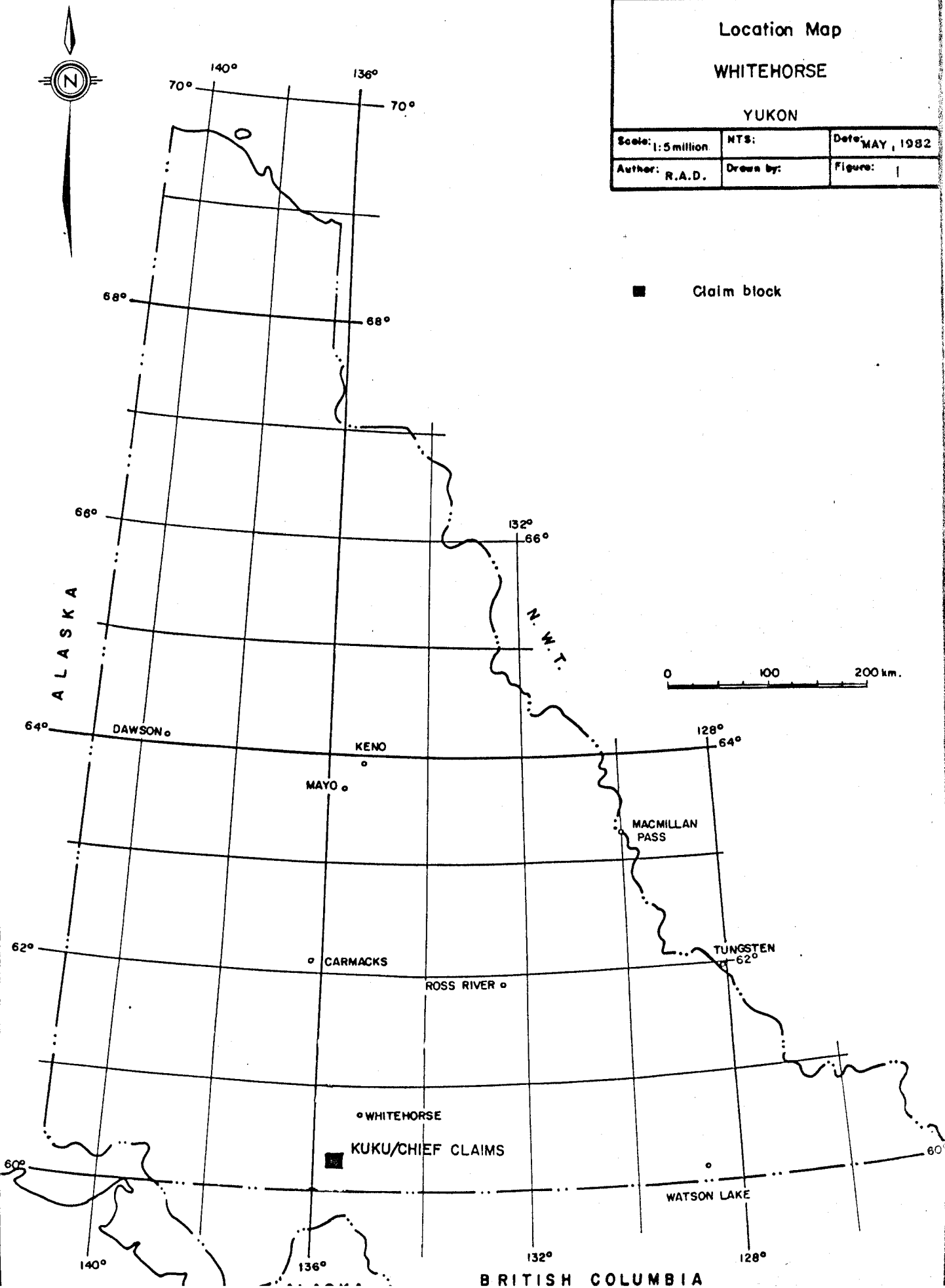
Location Map

WHITEHORSE

YUKON

Scale: 1:5 million	NTS:	Date: MAY, 1982
Author: R.A.D.	Drawn by:	Figure: 1

■ Claim block

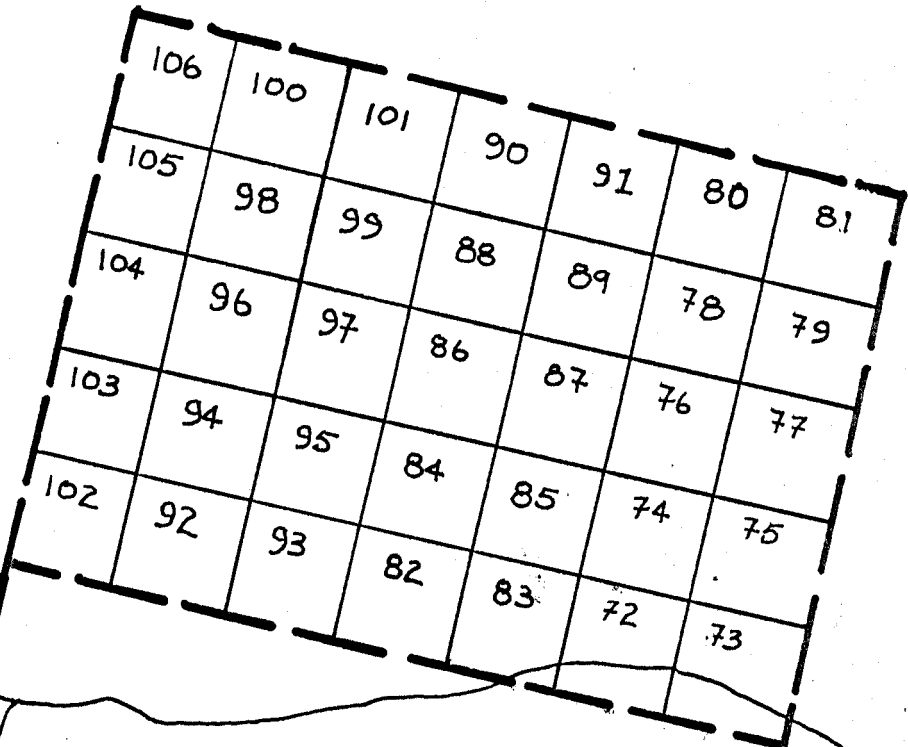


60° 15'

136° 20'



Butte Creek



CHIEF 1-71

KUKU 1-331

SKUKUM

CREEK



Agip Canada Ltd.

MT. SKUKUM
LOCATION MAP
CHIEF 72-106 CLAIMS

YUKON

NTS. 105 / D / 3

SCALE:

1:31,600

AUTHOR:

A. D.

DATE:

JULY / 1983

FIGURE:

Good roads lead from Whitehorse for 65 kilometers, first southeast along the Alaska Highway and then south on the Carcross Road parallel to the White Pass & Yukon railroad, crossing the railroad onto secondary roads along the Wheaton River to the abandoned Wheaton River airstrip. From here a further 15 kilometers of four-wheel-drive road leads to Mt. Skukum. The last 11 kilometers of road were constructed in October of 1982 to access the main working areas.

1.3 Physiography and Vegetation

The Mt. Skukum area ranges in elevation from 1000 meters to 2350 meters; the main areas of interest lie between 1600 and 1900 meters. The topography is mountainous, with sharp rugged peaks and serrated ridges surrounded by glacial cirques, deep U-shaped valleys and hanging valleys. Away from the higher peaks, the topography is much more subdued.

Vegetation in the area is very sparse above 1200 meters. The lower valleys are well-forested with white spruce and lodgepole pine at the lower elevations and alpine fir near treeline. Above treeline, the flora is typically alpine with stunted willows and dwarf birch along creeks near treeline and grasses, mosses and alpine plants occupying the floors of the lower cirques and hanging valleys. Large areas are barren and consist predominantly of felsenmeer. A few stagnant glaciers, permanent snowfields and a number of rock glaciers occur in the area.

2. GEOLOGY

2.1 General Geology

The Mt. Skukum area consists of a 10 kilometer wide circular erosional remnant of Tertiary intermediate to felsic volcanic rocks of the Skukum Group (Figure 3). The Skukum Volcanics are considered part of the Sloko volcanic province which extends through north-central British Columbia into southern Yukon. In the Yukon, the Skukum group is considered part of the Mt. Nansen Group, ranging in age from 70 to 50 Ma.

The Skukum volcanic sequence is unconformable over a basement consisting of metamorphosed Late Precambrian schist and marble intruded by granitic rocks of the Coast Plutonic complex. Large remnants (roof pendants) of the Late Precambrian metamorphosed rocks extend from the western margin of the Skukum complex several kilometers to the northwest.

Small Tertiary quartz-feldspar porphyries, dykes and late basalt and diabase dykes are intrusive into the Skukum group. The late basalts possibly correlate with the Quaternary Miles Canyon basalts, or are a late phase of Skukum magmatism.

2.2 Volcanic Stratigraphy

The volcanic rocks of the Skukum complex are flat-lying to gently-dipping; the stratigraphy is highly dissected and discontinuous due to normal faulting. Paleotopography also exerts a marked effect on the distribution and thickness of volcanic units. Lithologies in the area are predominantly andesite to rhyolite flows and pyroclastics, with a greater volume of pyroclastics than flows.

Detailed mapping at 1:10,000 scale over the claim block indicates that two volcanic cycles are preserved within the Skukum complex. Cycle I consists of laharic breccias and intermediate to felsic, moderately to densely welded tuffs, capped by a thick (> 700 m) pile of andesitic tuffs and flows. Cycle II volcanics consist of rhyolite flows, spherulitic flows, lapilli tuff and densely welded rhyolite ash tuffs. Cycle I volcanics, especially the andesites, are thickest at Mt. Skukum and the Main Cirque; Cycle II felsic volcanics attain their greatest thickness in the northeast corner of the claim block. This relationship may reflect separate vent areas for each cycle. Exposed lithologies underlying the CHIEF 72-106 claims are entirely of Cycle II origin.

Units of the Cycle II volcanic sequence are exposed in the southeastern side of the Main Cirque and over a large portion of the northeastern quarter of the KUKU/CHIEF claim block. Lithologies consist of autobrecciated rhyolite flows, flow-banded rhyolite, lapilli tuff and densely-welded tuff.

Rhyolite autobreccia and flow-banded rhyolite capped by a thick section (over 100 meters) of densely-welded and columnar-jointed tuff are exposed in the southeast corner of the Main Cirque.

In the northeast corner of the claim block, the sequence of felsic volcanic rocks of Cycle II is not exactly the same as the section in the Main Cirque. The densely-welded tuff unit appears to be absent or is represented by non-welded lapilli or ash-fall units.

The CHIEF 72-106 claims are underlain by rhyolite lapilli tuff, welded tuff and other felsic pyroclastics with minor fine-grained andesite dykes and rhyolite dykes. Cliff outcrops on the north side of Butte Creek offer the best exposures within the claim block. Generally, the felsic volcanics display a moderate to strong phyllic alteration, marked by strong pyritization. From a distance, this zone displays a strong orange and grey to blue weathering colour due to the alteration. Veining has not been located to date, but calcite-filled vugs and matrix calcite are common.

The basal contact of the volcanics is not exposed in the immediate area.

2.3 Structure

The Skukum complex is located in a broad circular depression in the metasedimentary and granitic basement rocks. Marginal contacts between volcanics and underlying basement appear to be quite steep, especially in the southeastern side of the complex.

The primary structural features within the complex are normal, with extensional faults cutting both the volcanics and the underlying basement rocks. The volcanic units within the Skukum complex are generally flat-lying to gently dipping.

The predominant fault trend within the complex is 045° and steeply dipping, with a possible conjugate set trending 350° and steeply dipping. A third set trends $N30^{\circ}W$.

On the CHIEF 72-106 claims, the Cycle II felsic volcanics dip moderately ($10-15^{\circ}$) to the northeast and are cut by a steeply dipping NW striking rhyolite dyke.

3. 1982-1983 SURFACE EXPLORATION

3.1 Introduction

The CHIEF 72-106 claims were staked to cover highly anomalous soil values north of Butte Creek. Initially, a line of 12 soil samples at 25 m intervals returned values of up to 2620 ppb Au. Follow-up work in late 1982 and 1983 consisted mainly of mapping, soil sampling and rock chip sampling. A small 300 m compass and chain grid was established for control in early 1983 on the southeast corner of the claims.

3.2 Soil Sample Geochemistry

Soil samples were collected at 25 m intervals on contoured lines across talus slopes. Figure 4 shows the outline of the CHIEF 72-106 claims, soil sample numbers and locations, and geochemical analyses for gold, silver, mercury, arsenic, copper, lead and zinc.

The lower soil line (1500 m elevation) returned a high value of 2620 ppb Au; the average value for 45 samples over 1100 m is 206 ppb Au. Soil lines higher up the slope returned background values.

3.3 Rock Chip Sample Geochemistry

Limited rock chip sampling was undertaken on the CHIEF 72-106 claims. A total of 21 rock chip samples were analysed for gold, silver, with 13 samples also analysed for mercury.

Results and sample locations are plotted on Figure 5. The highest value returned was 205 ppb Au from sample # 1242099. Mercury values averaged 20 ppb.

APPENDIX A

SAMPLING AND ANALYTICAL METHODS

SOIL AND TALUS FINE SAMPLES

Soil samples were collected on soil grids and talus fine samples below cliffs and outcrops showing evidence of veining or alteration. Soil grid samples were collected at 25 m intervals; talus fine samples were collected on contour lines at 20-50 m horizontal spacing.

Samples were collected using small collapsible shovels at depths between 15-30 cm in the B horizon; in many areas soil profiles are poorly developed. Frequently in talus slopes this proved impractical due to the very coarse blocky nature of the material, although generally sufficient fine material could be collected near the top of the talus slope. Where possible, the samples were field-screened through a 10 mesh stainless steel sieve. Field notes on color, size fraction and organic content were taken.

CHIP SAMPLING

Chip samples were collected using a small sledge hammer and moil into sample bags held by a sampling ring. Samples were collected in narrow (5-10 cm) swaths as continuous chips across the strike of lithological units or veins. All samples were terminated at prominent lithological contacts. Lengths of samples ranged from 1-5 meters.

ANALYTICAL METHODS (as detailed by Bondar-Clegg, Whitehorse)

Samples collected were analysed for gold and silver. Analyses were done by Bondar-Clegg Laboratories in Whitehorse and/or Vancouver.

Soil samples are dried and sieved to -80 mesh. Rock chip samples are pulverized and a split of the -100 mesh fraction is analysed.

Gold analyses are by fire assay techniques, a 10 g sample is mixed with flux and heated in the fire assay furnace. The molten mixture is then poured and the lead button containing the metals is separated from the slag. The button is then placed in a cupel and heated so that the lead is removed and the noble metals remain behind as a small bead.

The bead is transferred to a test tube and treated with nitric acid followed by aqua regia to dissolve it completely. The solution is then analysed for gold by atomic absorption using standards with a similar matrix.

Silver is analysed using a hot nitric acid digestion. A sample weighing 0.5 gm is placed in a test tube and 1.5 ml HNO_3 is added and the sample is heated in a hot water bath for one-half hour. Then 0.5 ml of HCL are added and the sample is heated for 1 1/2 hours further. The sample is then diluted with 10 ml water and allowed to settle, and then analysed by atomic absorption using standards.

Recent comparisons between sifted and pulverized rock samples (core samples) suggest that the sifted samples return high values. There is also evidence that indicates free gold (<15 microne) in sifted samples can cause contamination in succeeding samples.

APPENDIX B
CLAIM NAMES AND GRANTS

<u>Claim Name</u>		<u>Grant #</u>	<u>Claim Name</u>		<u>Grnat #</u>
CHIEF	72	YA74870	CHIEF	93	YA74891
	73	71		94	92
	74	72		95	93
	75	73		96	94
	76	74		97	95
	77	75		98	96
	78	76		99	97
	79	77		100	98
	80	78		101	99
	81	79		102	900
	82	80		103	01
	83	81		104	02
	84	82		105	03
	85	83	CHIEF	106	YA74804
	86	84			
	87	85			
	88	86			
	89	87			
	90	88			
	91	89			
CHIEF	92	YA74890			

APPENDIX C

STATEMENT OF COSTS

Surface Work - CHIEF 72-106
July 26th 1982 to July 25th 1983

1. Colour Air Photography - 1:20,000 scale colour photographs flown over KUKU
 1-221 and CHIEF 1-106 on August 13th 1982 by
 McElhanney Surveying and Engineering

Total cost (including 3 hours helicopter time to set out grid
 targets) = \$5,000

CHIEF 72-106 = 35 claims x \$11.5 \$402.50
 =====

2. Labour Costs - July 26th to September 11th 1982

R.C.R. Robertson	: ½ day @ \$170/day	\$ 85.00
R.A. Doherty	: ½ day @ \$110/day	55.00
R.A. Arthur	: 6 days @ \$98/day	588.00
J. Haase	: 3 days @ \$98/day	294.00
L.K. Bertrand	: 2 days @ \$88/day	176.00
C. Malboeuf	: 2 days @ \$81/day	162.00
J. Morris	: 3 days @ \$59/day	177.00
		\$1,537.00 =====

Labour Costs - May 23rd to July 25th 1983

K. Bertrand	: 2 days @ \$98/day	\$ 196.00
K. Dieckman	: 5 days @ \$98.40/day	176.80
P. Maheux	: 2 days @ \$89.40/day	447.00
J. Morris	: 3 days @ \$69/day	207.00
G. Check	: 4 days @ \$52/day	208.00
		\$1,234.80 =====

TOTAL LABOUR: \$2,771.80
 =====

Appendix C (continued)

3. Helicopter Costs - 1982

4.0 hours transporting crews to and from work area,
including fuel: 4.0 x \$505/hour

\$2,020.00
=====

4. Food and Accommodation - @ \$20/man day

35 man days x \$20

\$660.00
=====

5. Analytical Costs - 1982/83 combined

Chip samples: 8 samples Au/Ag @ \$10.65 ea
 13 samples Au/Ag/Hg @ \$14.65 ea

\$ 85.20
 190.45

Soil samples: 71 samples Au/Ag @ \$8.75 ea
 25 samples Au/Ag/Cu/Pb/Zn @ \$11.20 ea
 8 samples Au/Ag/Hg @ \$12.75 ea

621.25
280.00
102.00

\$1,278.90
=====

TABULATED SURFACE COSTS

(1) Colour air photographs
(2) 1982/83 labour costs
(3) Helicopter costs
(4) Food and accommodation
(5) Analytical costs

\$ 402.50
2,771.80
2,020.00
660.00
1,278.90

TOTAL

\$7,133.20
=====

APPENDIX D
STATEMENT OF QUALIFICATIONS

I, RICHARD ALLAN DOHERTY, of the city of Calgary in the Province of Alberta, hereby certify:

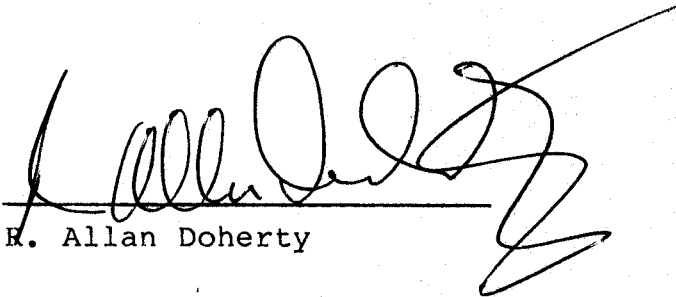
That I am a geologist employed by Agip Canada Ltd. and that I caused to be performed the work described in this report.

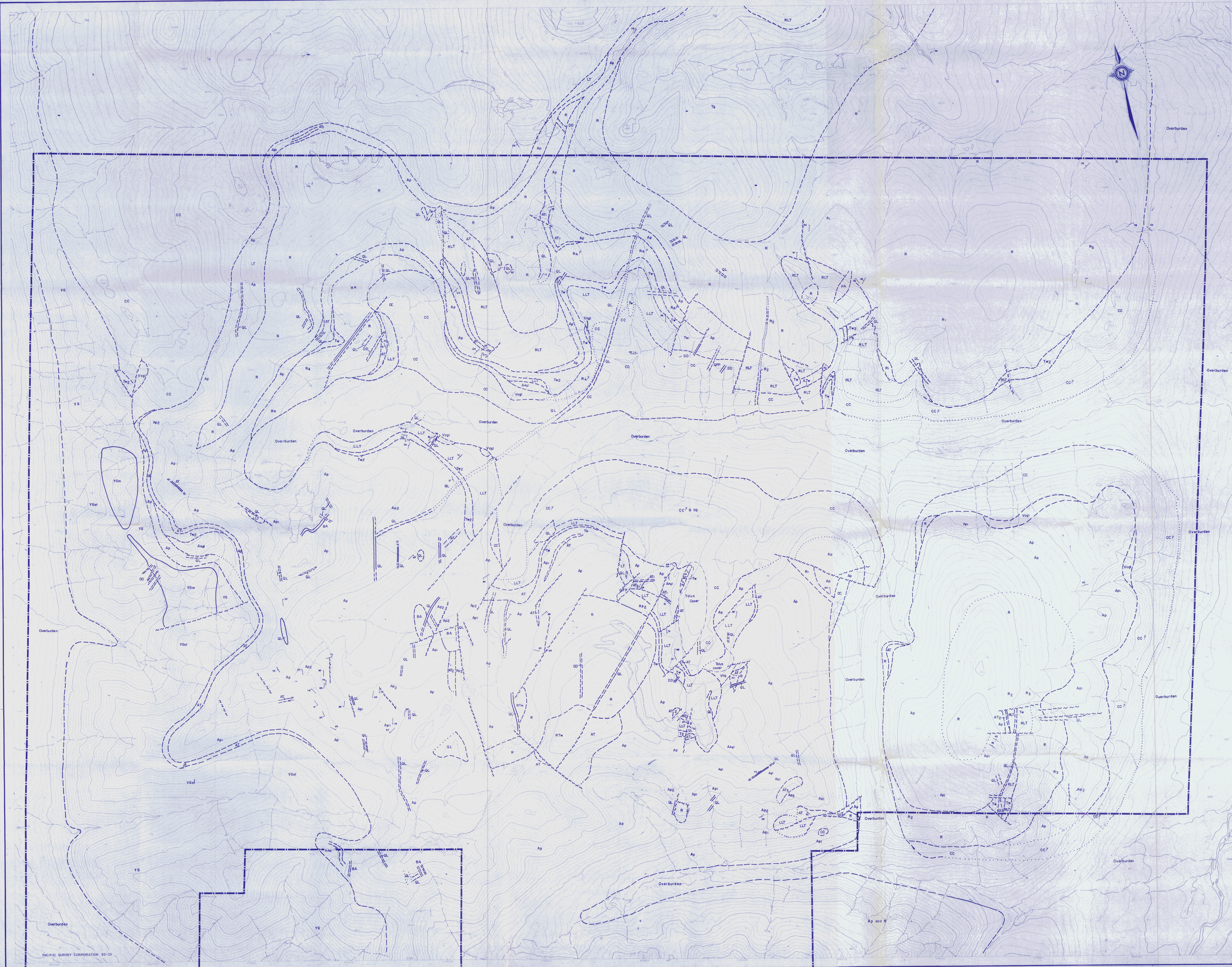
That I obtained a Bachelor of Science degree with Honours in Geology from the University of New Brunswick at Fredericton in 1977 and carried out graduate studies at Memorial University, St. John's, Newfoundland.

That I have been engaged in mineral exploration on a full-time and part-time basis for nine years of which five have been on mineral exploration programs in the Yukon Territory, Northwest Territories and British Columbia.

That I am a member of Calgary Mineral Exploration Group and of the Canadian Institute of Mining and Metallurgy.

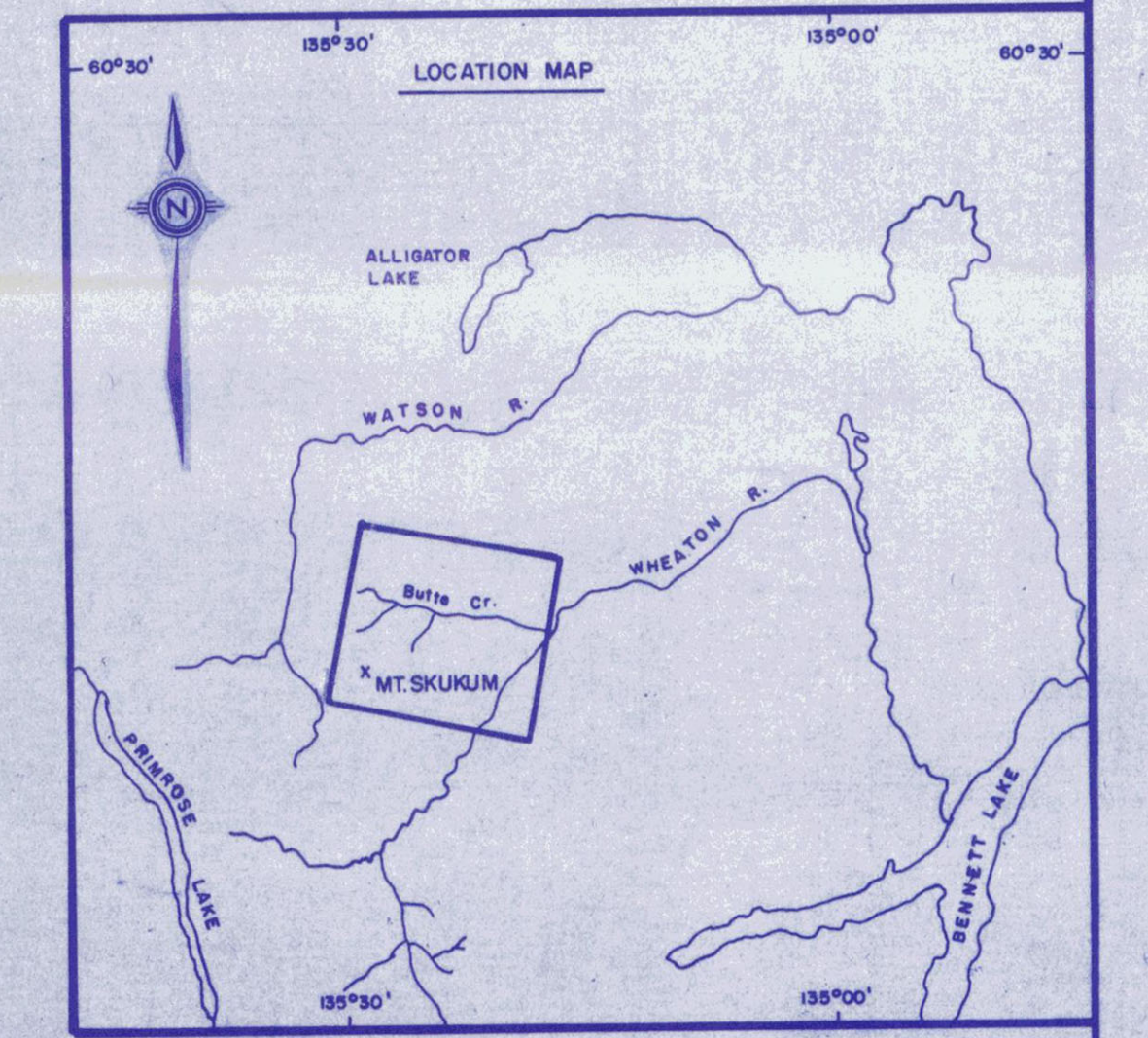
Signed at Whitehorse in the Yukon Territory this 29th day of July 1983.


R. Allan Doherty



- LEGEND**
- QUATERNARY**
 DD Diabase dikes and sills
- TERTIARY**
 Tg Microgranite
 QFP Quartz Felsite Porphyry
- SKUKUM GROUP**
 QL Quartz Latite and related dykes and sills
 RTw Welded Rhyolite Tuff
 R Rhyolite
 R1 - gray to purple, green flow banded, gherulites outbrecciated
 R2 - massive red to gray, siliceous
 R3 - rhyolite linear tuff
 R4 - light pink to red-brown, massive, distinct basal jagged unit
 RLT Rhyolite Lapilli Tuff - yellow weathering, recessive, huffaceous character not always present, may be partly welded
 BA Basaltic Andesite
 Ap Porphyritic Andesite
 Ap1 - massive
 Ap2 - flow breccia
 Agl Andesite Agglomerate
 Tw Welded Tuff felsic to intermediate
 Tw1 - move-brown color (possibly hematitic), usually strongly welded
 Tw2 - lower unit, partially welded, commonly highly altered and fractured, pink-red color
 LLT Litic Lapilli Tuff - yellow to yellow green surface color, cliff forming, basement clasts common, moderately welded
 AT Andesite Tuff
 AT1 - well bedded, green to move color, - tuffs and epiclastic sediments
 AT2 - blocky Andesite Tuff
 AT3 - move colored, fine grained andesite tuff
 Vog Volcanic Conglomerate
- CRETACEOUS**
 CC Coast Crystalline Complex - granite, monzonite, granodiorite
- PROTEROZOIC-PALEOZOIC**
 YB Yukon Metamorphic Group Complex
 YGst - quartz biotite schist
 YGm - marble

- SYMBOLS**
- Geological contact (defined, approximate, assumed)
 Fault
 Claim block boundary
 Bedding
 Jointing (vertical, inclined)



AGIP CANADA LTD.

MT. SKUKUM
 KUKU 1-53L - CHIEF 1-102
 Yukon
GEOLOGY 091474

SCALE: 1:50,000 AUTHOR: J.A.S./R.A. DATE: NOV. 1988
 DRAWN BY: S.T.B. M.T.E. FIGURE: 000930-3

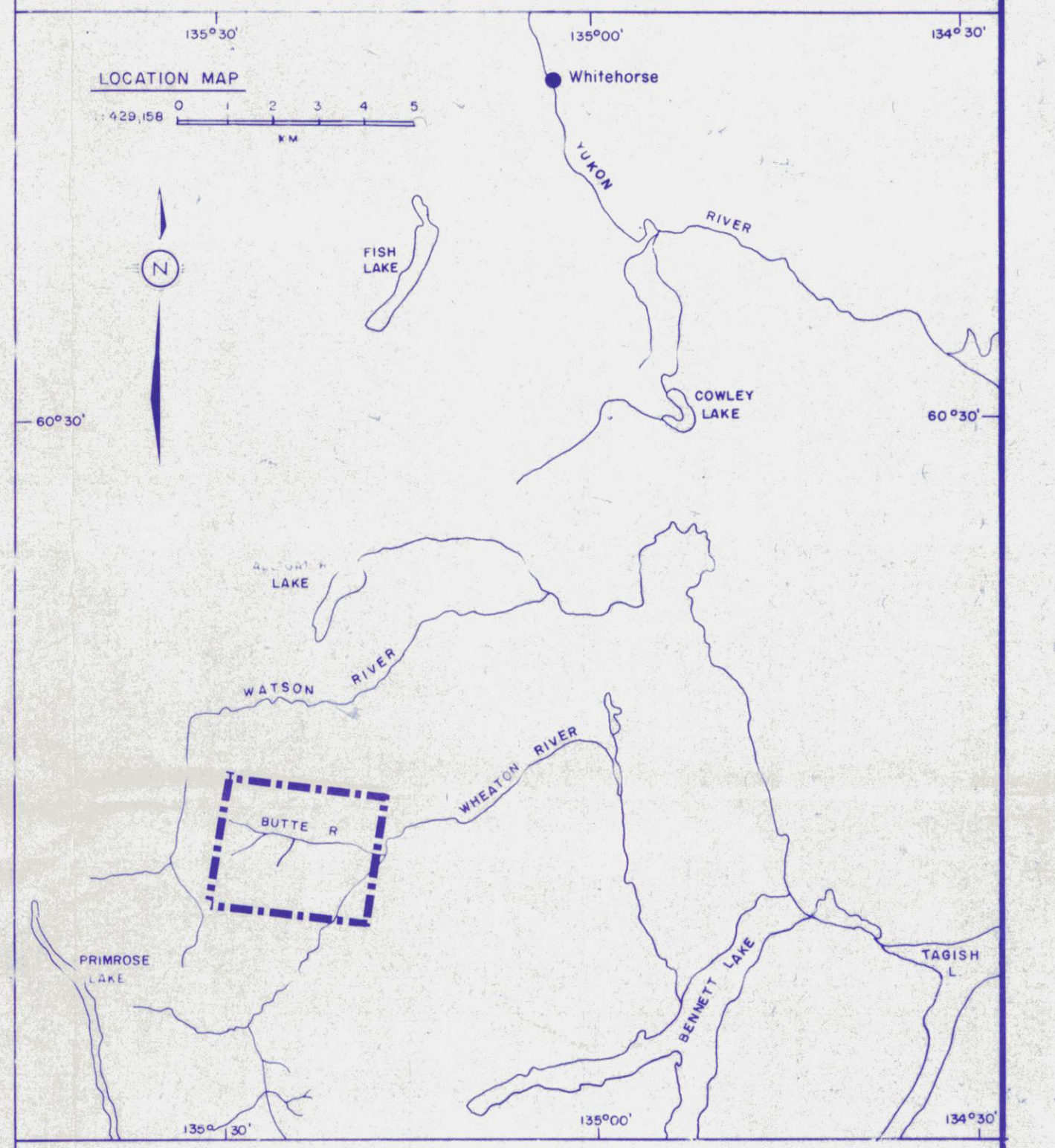
PACIFIC SURVEY CORPORATION 82-35



LEGEND

- Creek
- Ice Field
- Swamp
- Soil sample
 - As
 - As₂S₃
 - As₂CO₃ · 5H₂O
 - As₂CO₃ · 10H₂O

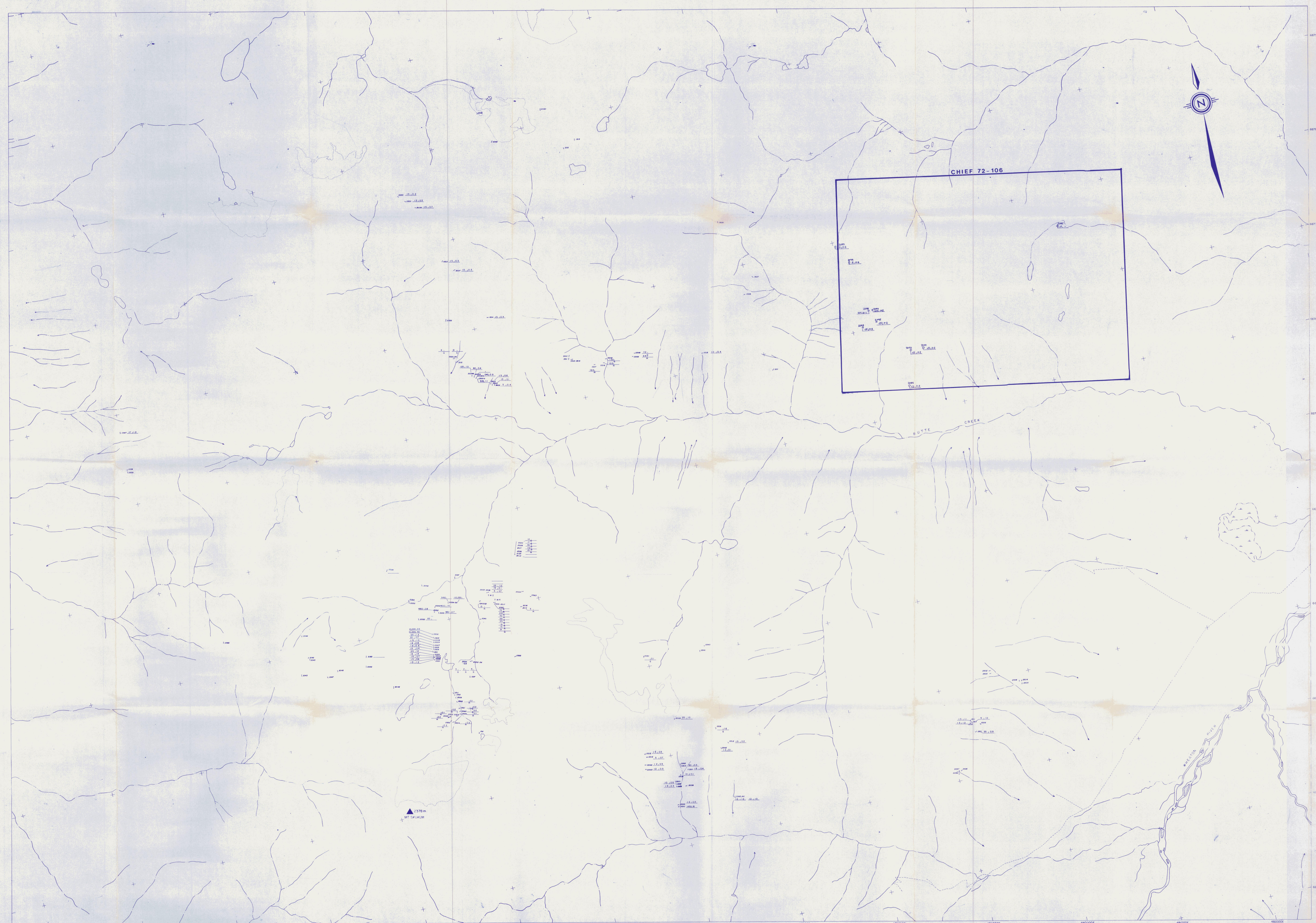
All values in ppm, except As₂S₃ which are in %



0 100 200 300 400 500 METERS

091474

SOIL GEOCHEMISTRY		PROJECT NO. 400830
SCALE 1:10,000	PROJECT	SURVEYED BY: DRYDEN/STO
MT. SKUKUM		DRAWN BY: G.T.S.
		DATE: 1982
		APPROVED:
AGIP CANADA LTD.		FIGURE 3



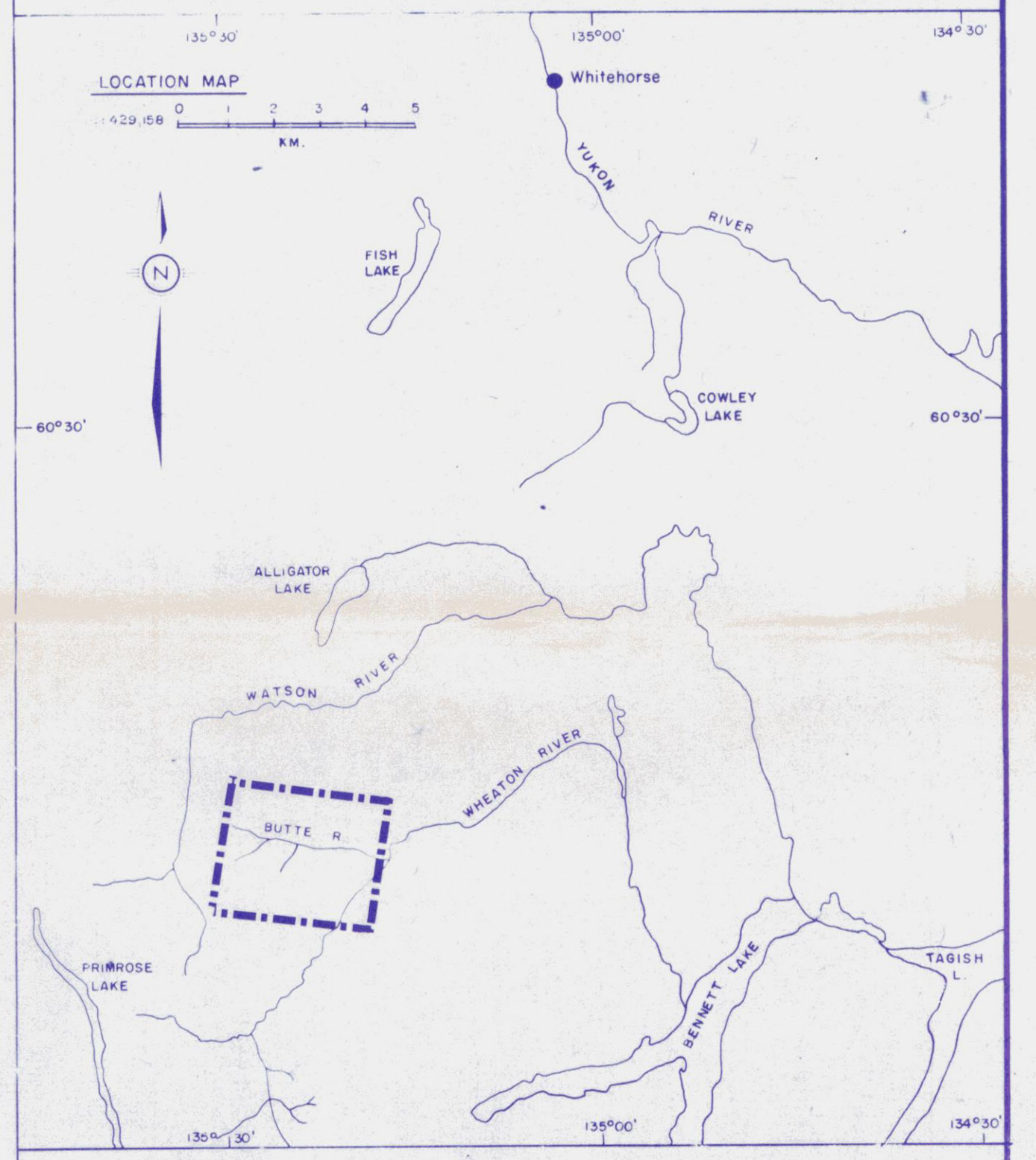
- LEGEND**
- Creek
 - Ice Field
 - Swamp
 - ROCK CHIP SAMPLE
As (1975/76) 1976
As (1976/77) 1977
 - ROCK CHIP SAMPLE
As (1977/78) 1978
As (1978/79) 1979

CHIEF 72-106

BUTTE CREEK

MOUNTAIN RIVER

2378m
MT SKUKUM



0 100 200 300 400 500 METERS

091474

CHIP SAMPLES		PROJECT NO. 400885
SCALE 1:25,000		DRAWN BY G.T.S.
PROJECT MT SKUKUM		DATE 1982
VUBSD		APPROVED
AGIP CANADA LTD.		FIGURE 5