



STYLE NO. 2x2-20B

10489
DATE

BROWN-LOGAN
ASSIGNMENT

502362

INSERT EMULSION

FILE NO.

PREMIER MODEL

ADULARIA-SERICITE EPITHERMAL SYSTEM

EVIDENCE:

1. QUARTZ-ADULARIA-SERICITE VEINS WITH
BASE METALS AT DEPTH/PRECIOUS METALS ABOVE
2. BARITE & PYRRARGYRITE AT HIGHER LEVELS
3. CLAY ALTERATION
4. UPWARD FLARE IN SERICITE ALTERATION
5. PROPYLITIC ALTERATION
-PERIPHERAL & AT DEPTH

LATE MAGMATIC K-FELDSPAR

EVIDENCE:

1. OVERGROWS ALL OTHER PHENOS.
2. ABSENT NEAR CHILLED MARGINS
3. SIZE & ABUNDANCE DIFFER
4. ZONED & TWINNED

OUTLINE

- 1. REGIONAL FRAMEWORK**
- 2. PREMIER**
- 3. SULPHURETS/KERR**
- 4. SNIP/SKYLINE**
- 5. GALORE CREEK**

CONCLUSIONS

**PORPHYRY
Cu-Au**

**VEINS
Au-Ag**

1. EARLY JURASSIC (190-200 Ma)
2. SYENITE-QUARTZ MONZONITE
 - K-FELDSPAR MEGACRYSTS
 - 2 FELDSPARS
3. POTASSIC ALTERATION
4. STRUCTURAL CONTROL

REGIONAL SOURCES

B.C. GEOLOGICAL SURVEY

- DANI ALLDRICK
- JIM BRITTON
- MIKE GUNNING
- JIM LOGAN

GEOLOGICAL SURVEY OF CANADA

- BOB ANDERSON
- JACK SOUTHER

REGIONAL SOURCES

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AGE CONSTRAINTS

ABSOLUTE

(A) INTRUSIONS

- | | |
|--|------------|
| 1. U-Pb (ZIRCON)..... | 189-195 Ma |
| 2. K-Ar (HB, BI, SER, W.R.)..... | 63-210 Ma |
| -PROBLEM = METAMORPHIC OVERPRINT APPROX..... | 100 Ma |

RELATIVE

(B) ORE

1. GALENA Pb-ISOTOPE SIGNATURES

(C) FIELD RELATIONSHIPS

PREMIER

RESERVES:

5.87 mT	2.2 g/T	Au
	80.3 g/T	Ag

PAST PRODUCTION:

1918-68	4.7 mT	13.0 g/T	Au
		275 g/T	Ag

ACKNOWLEDGEMENTS:

- LANGILLE
- BURTON
- BUDDINGTON
- OTHERS...

**GOLD VEINS AND
COPPER PORPHYRIES**

**THE
K-FELDSPAR
CONNECTION**

SIMPLIFIED LOCAL GEOLOGY

Stonehouse Gold Deposit

Reg Property

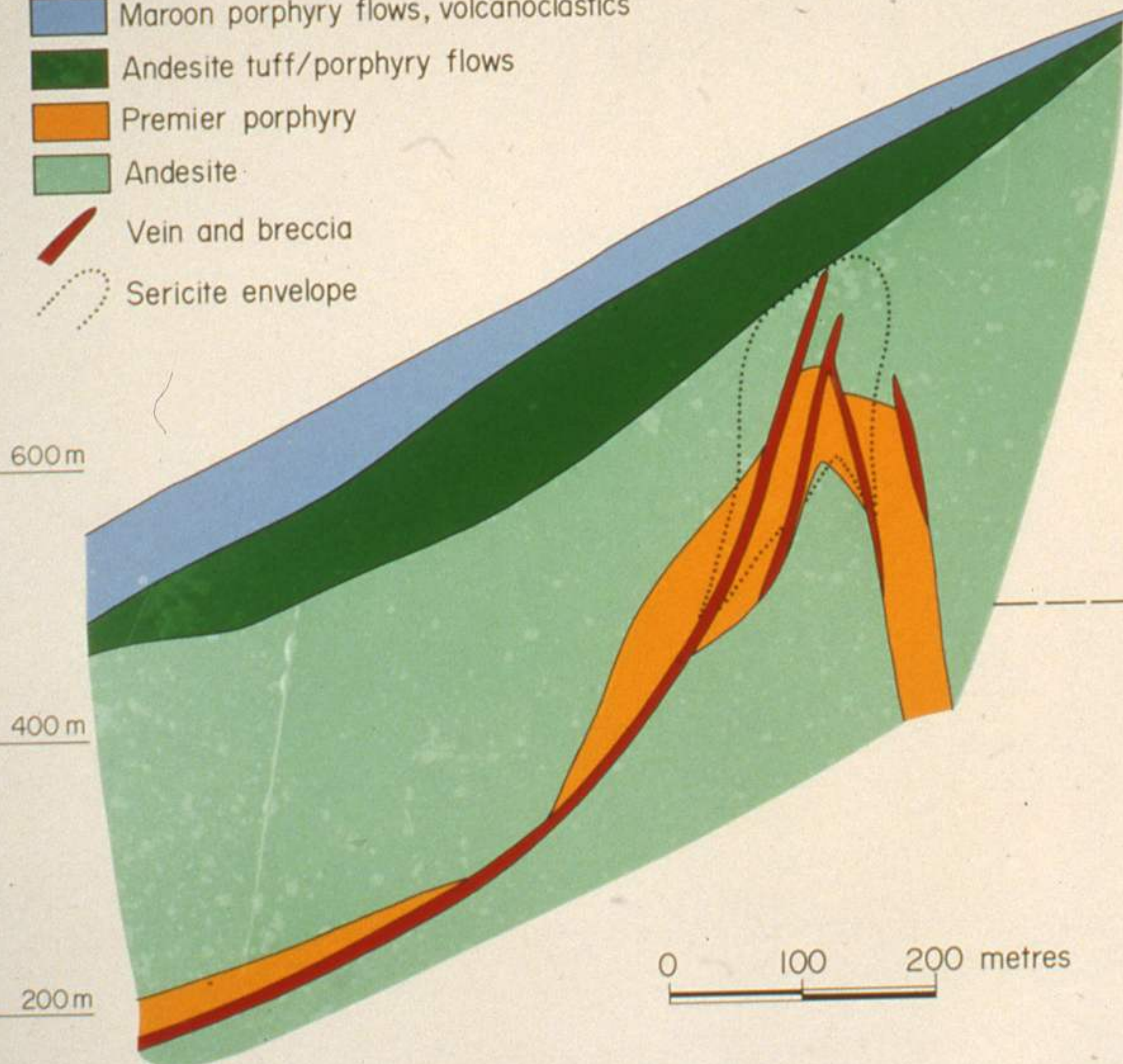




PREMIER MINE SECTION (LOOKING NORTH)

LEGEND

- Maroon porphyry flows, volcanoclastics
- Andesite tuff/porphyry flows
- Premier porphyry
- Andesite
- Vein and breccia
- Sericite envelope



VEIN MINERALS	WALL ROCK ALTERATION
ADULARIA QUARTZ calcite pyrite sphalerite galena tetrahedrite electrum polybasite pyrargyrite barite (argentite)	SERICITE adularia carbonate
adularia QUARTZ CALCITE PYRITE SPHALERITE GALENA tetrahedrite chlorite (chalcopyrite)	CARBONATE CHLORITE

UPPER LEVELS
 ↓
 LOWER LEVELS

PREMIER

LEGEND

TERTIARY

Granite

JURASSIC

Granodiorite, Premier porphyry

Hazelton Group

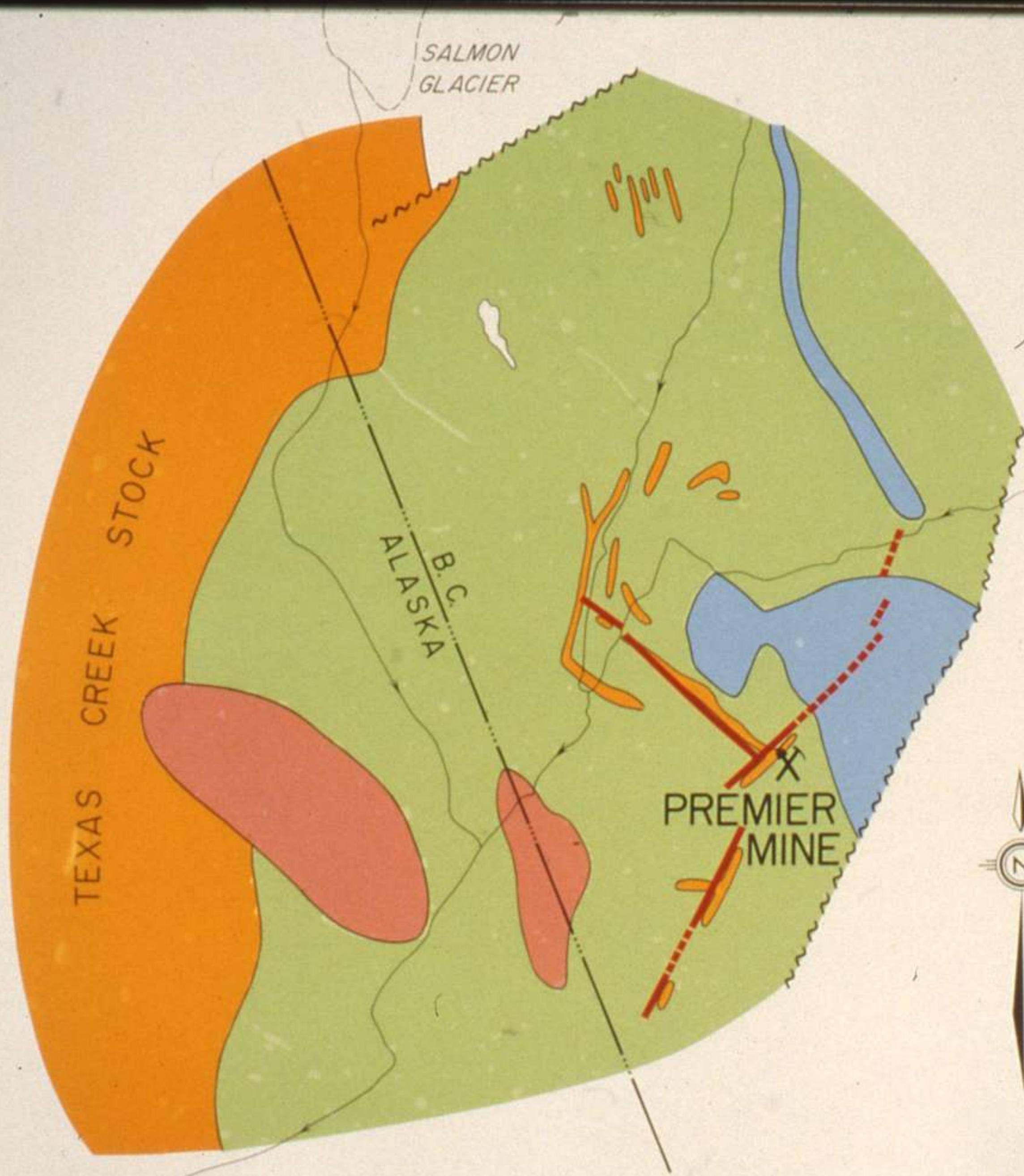
Maroon porphyry, volcanoclastics

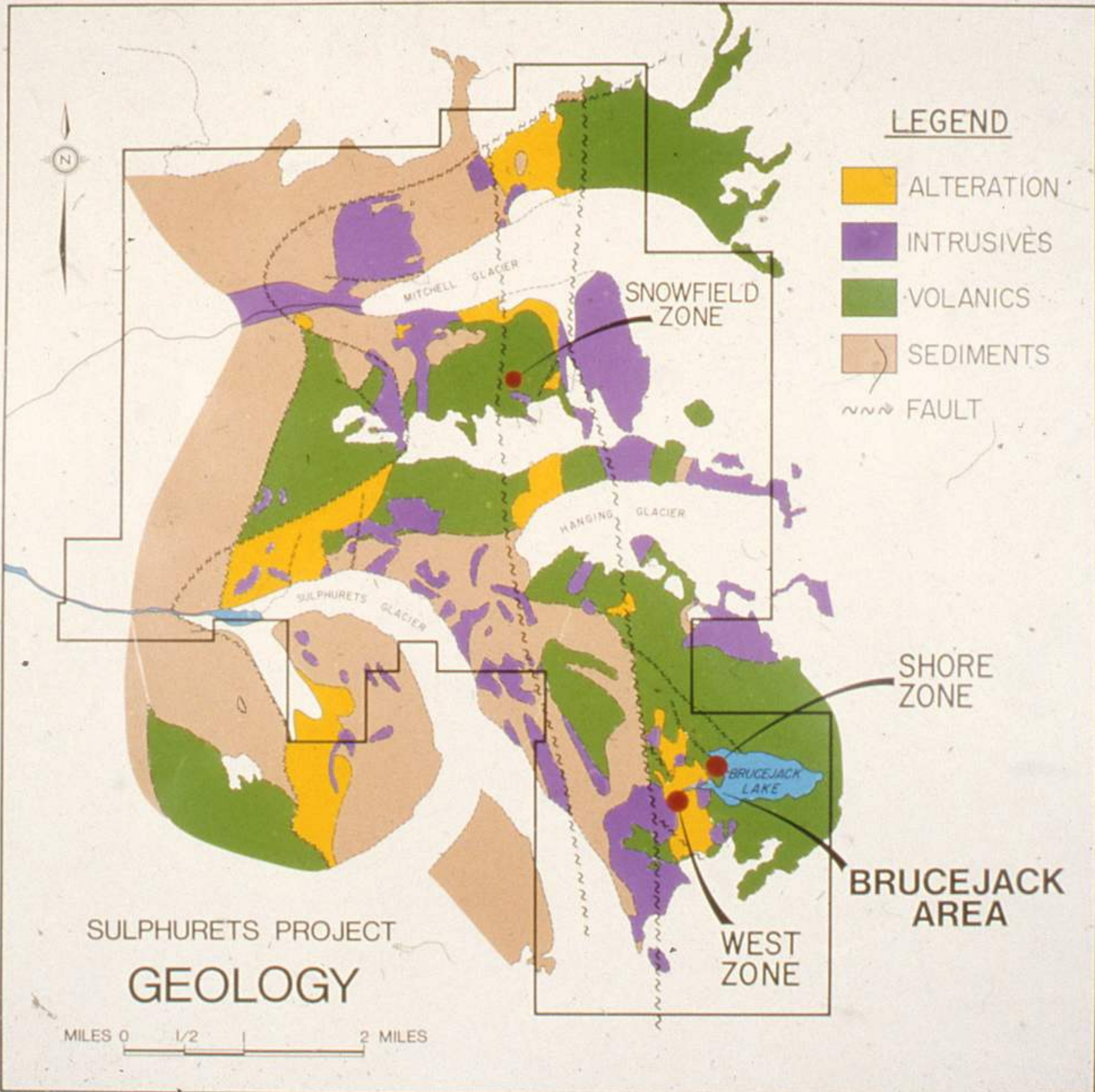
Feldspar porphyry flows,
andesite, argillite

Au-Ag Mineralization
Adularia-sericite alteration

Sub-surface zone

KILOMETRES





LEGEND

- ALTERATION
- INTRUSIVES
- VOLANICS
- SEDIMENTS
- FAULT

SULPHURETS PROJECT
GEOLOGY

MILES 0 1/2 2 MILES

WEST ZONE

BRUCEJACK AREA

SHORE ZONE

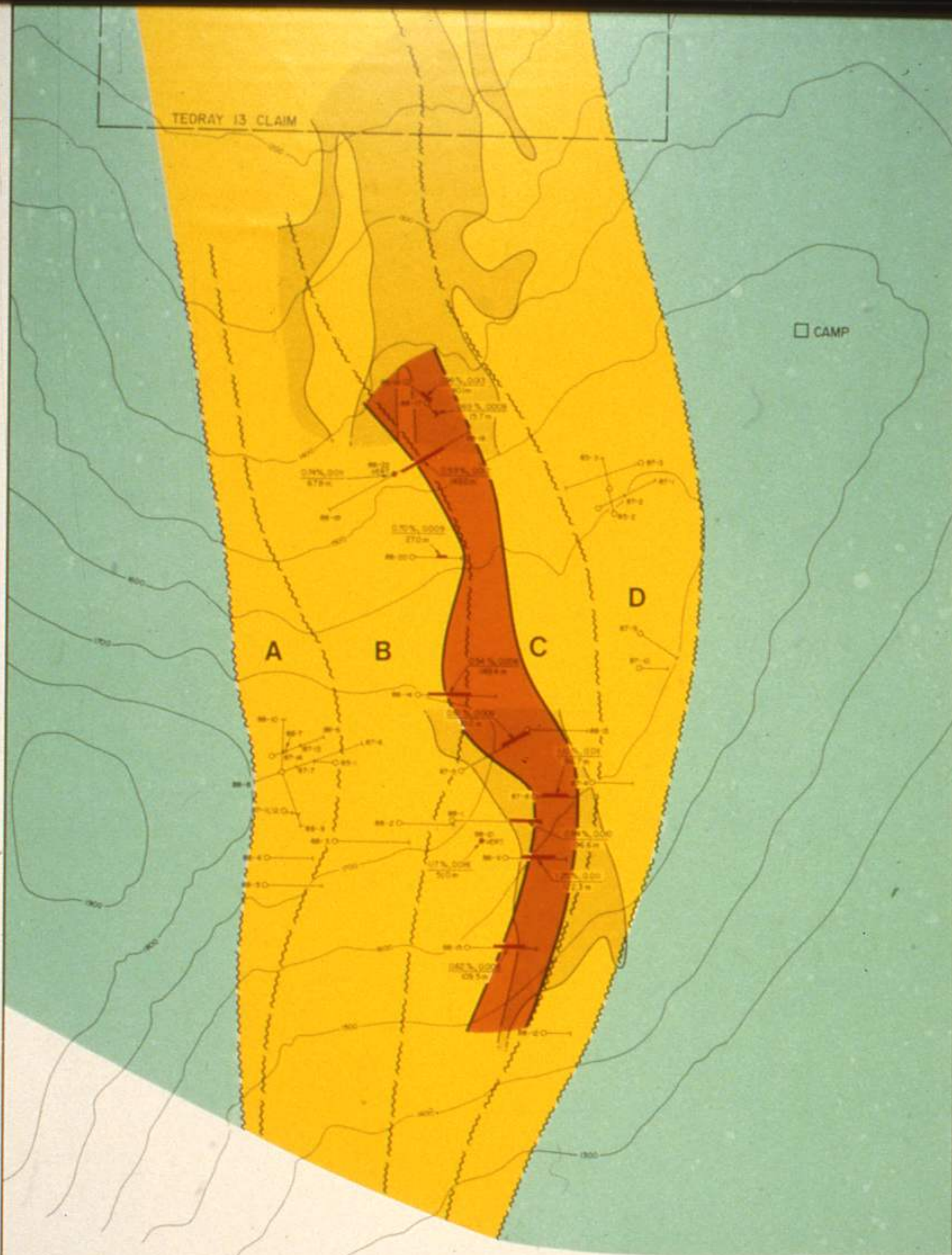
SNOWFIELD ZONE

MITCHELL GLACIER

HANGING GLACIER

SULPHURETS GLACIER

BRUCEJACK LAKE



	A	B	C	D
BEST DRILL INTERSECTION	0.573 oz Au/t, 38.01 oz Ag/t/2.0m	0.20% Cu, 0.003 oz Au/t/200.0m	1.25% Cu, 0.011 oz Au/t/22.3 m	0.069 oz Au/t, 0.17 oz Ag/t/4.0m
ALTERATION ASSEMBLAGE	SERICITE/CHLORITE	SERICITE/CHLORITE/ QUARTZ	QUARTZ/SERICITE	CHLORITE/EPIDOTE
STYLE OF MINERALIZATION	HIGH-GRADE Au-Ag-Cu Veins	LOW-GRADE Porphyry Cu-Au-Ag	HIGH-GRADE Porphyry Cu-Au-Ag	LOW-GRADE Disseminated Au

DOMAINS OF THE ALTERATION ZONE

GEOLOGY

	UNALTERED VOLCANIC AND SEDIMENTARY ROCKS
	QUARTZ-SERICITE- PYRITE-SCHIST

- LEGEND**
- DIAMOND DRILL HOLE with $\frac{\text{Copper in \%}, \text{Gold in ounces/ton}}{\text{Interval in Metres}}$
 - SURFACE TRACE OF HIGH-GRADE COPPER-GOLD MINERALIZATION
 - GEOPHYSICAL ANOMALY (Outline of IP Resistivity Low $\leq 300 \text{ ohm-metres}$)

KERR PROJECT COMPILATION MAP

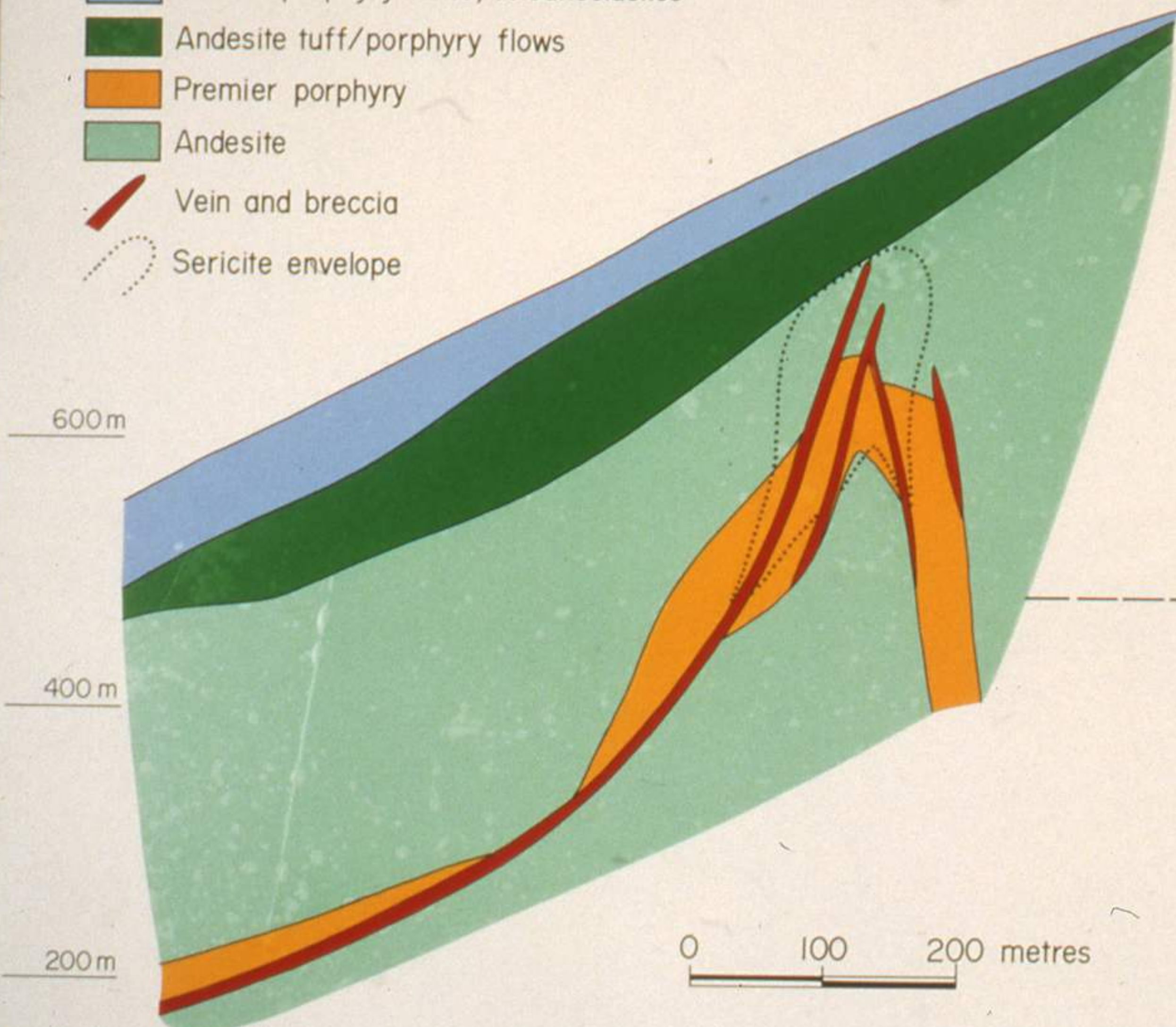
m 0 50 100 200 300 400 m

JAN 1989

PREMIER MINE SECTION (LOOKING NORTH)

LEGEND

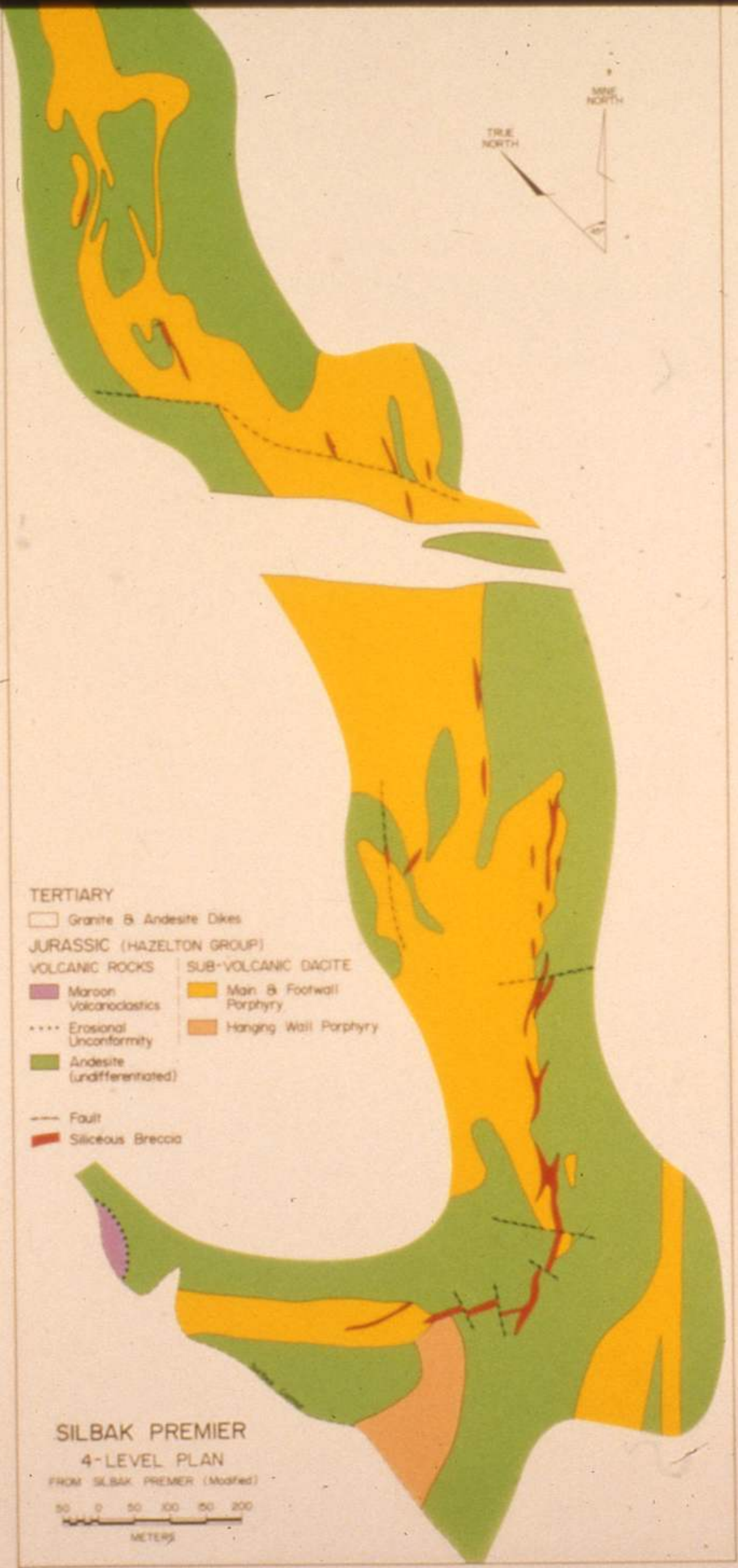
- Maroon porphyry flows, volcanoclastics
- Andesite tuff/porphyry flows
- Premier porphyry
- Andesite
- Vein and breccia
- Sericite envelope



UPPER LEVELS

LOWER LEVELS

VEIN MINERALS	WALL ROCK ALTERATION
ADULARIA QUARTZ calcite pyrite sphalerite galena tetrahedrite electrum polybasite pyrargyrite barite (argentite)	SERICITE adularia carbonate
adularia QUARTZ CALCITE PYRITE SPHALERITE GALENA tetrahedrite chlorite (chalcopyrite)	CARBONATE CHLORITE



TERTIARY

□ Granite & Andesite Dikes

JURASSIC (HAZELTON GROUP)

VOLCANIC ROCKS

■ Maroon Volcanoclastics

⋯⋯ Erosional Unconformity

■ Andesite (undifferentiated)

--- Fault

■ Siliceous Breccia

SUB-VOLCANIC DACITE

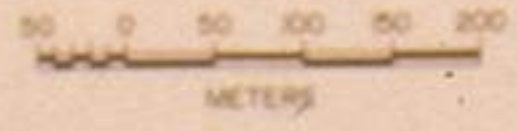
■ Man & Footwall Porphyry

■ Hanging Wall Porphyry

SILBAK PREMIER

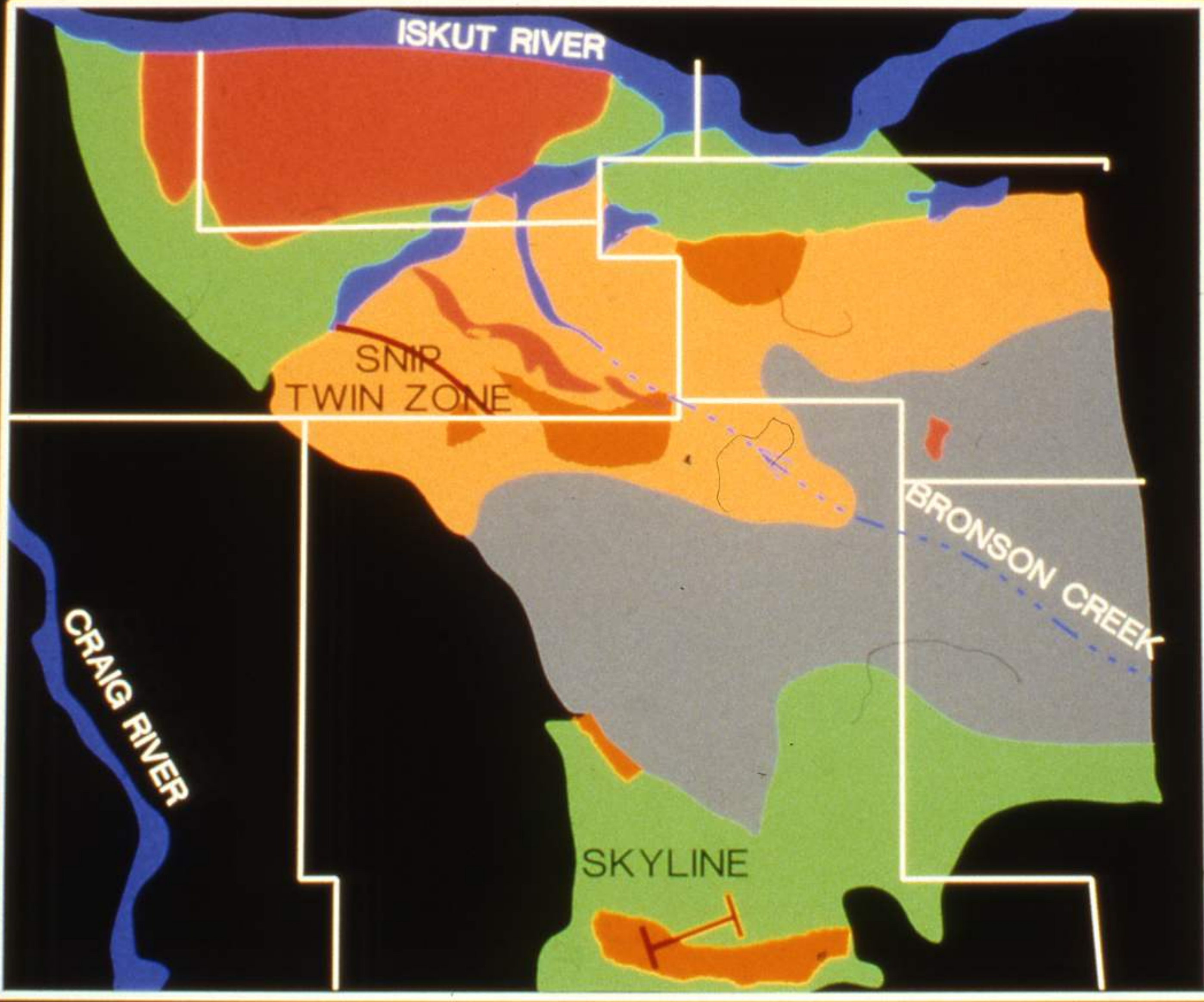
4-LEVEL PLAN

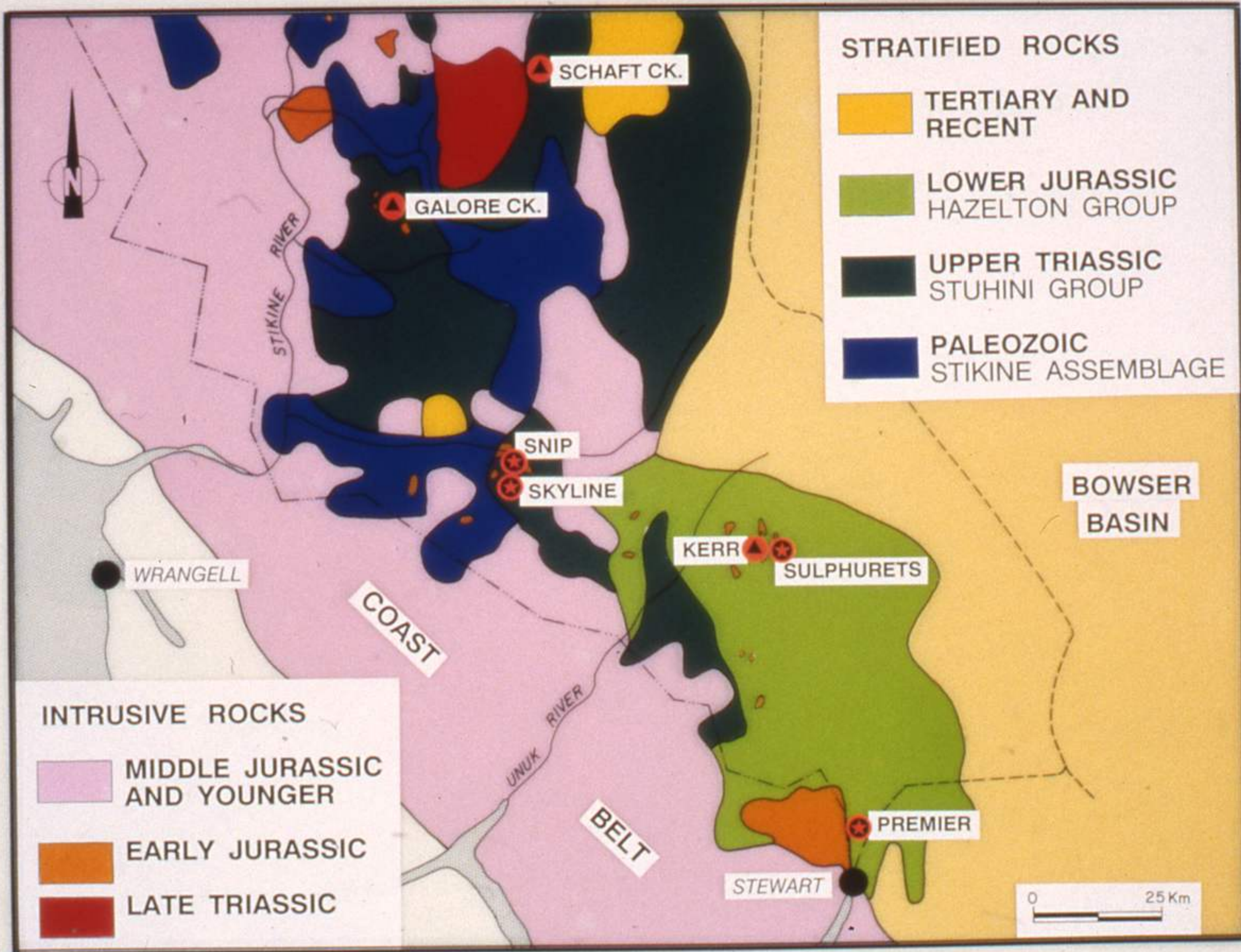
FROM SILBAK PREMIER (Modified)

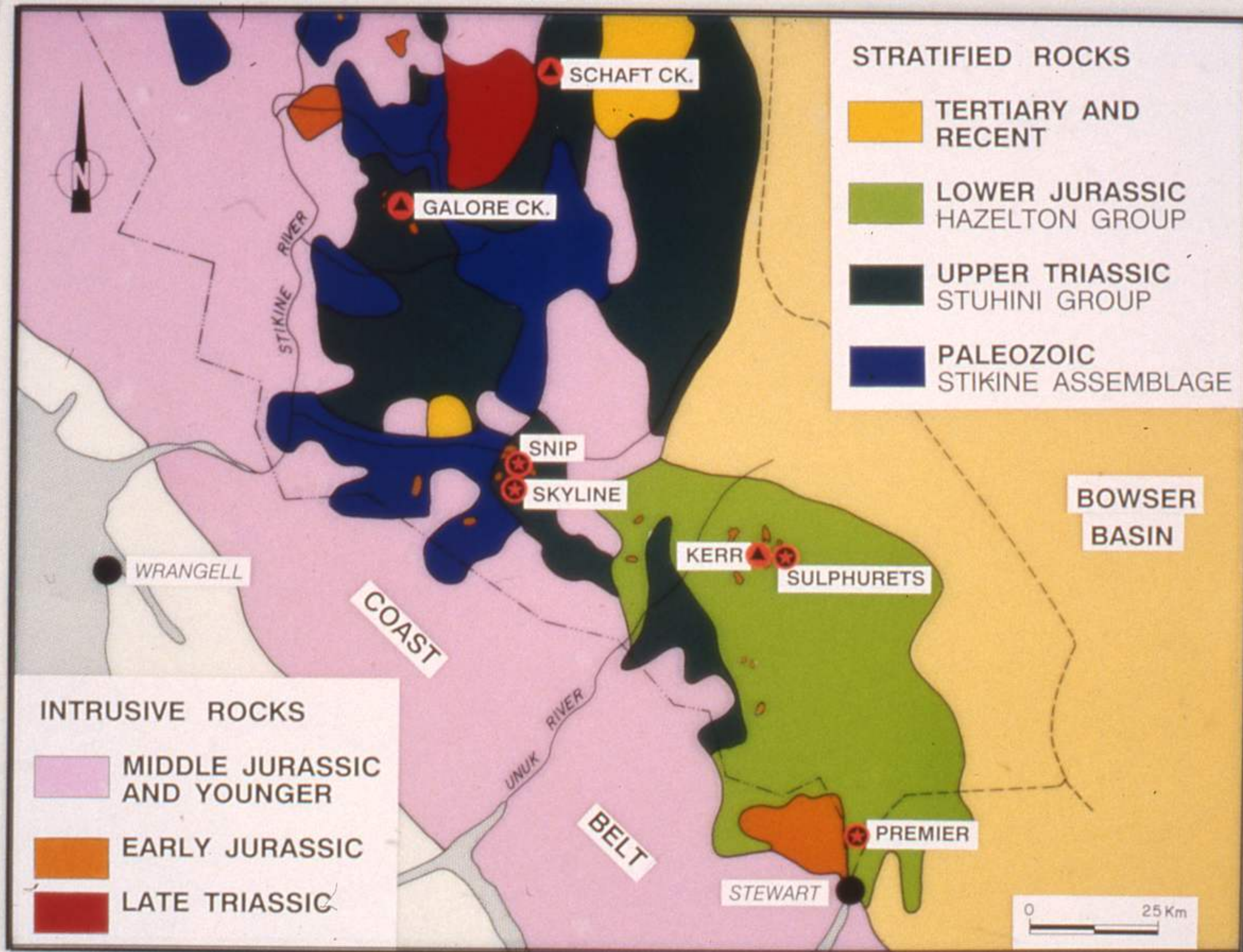


SNIP JOHNNY MOUNTAIN AREA GEOLOGY

- Alteration Zones
- Orthoclase Porphyry
- Intermediate Volcanics
- Argillite
- Feldspathic Wacke







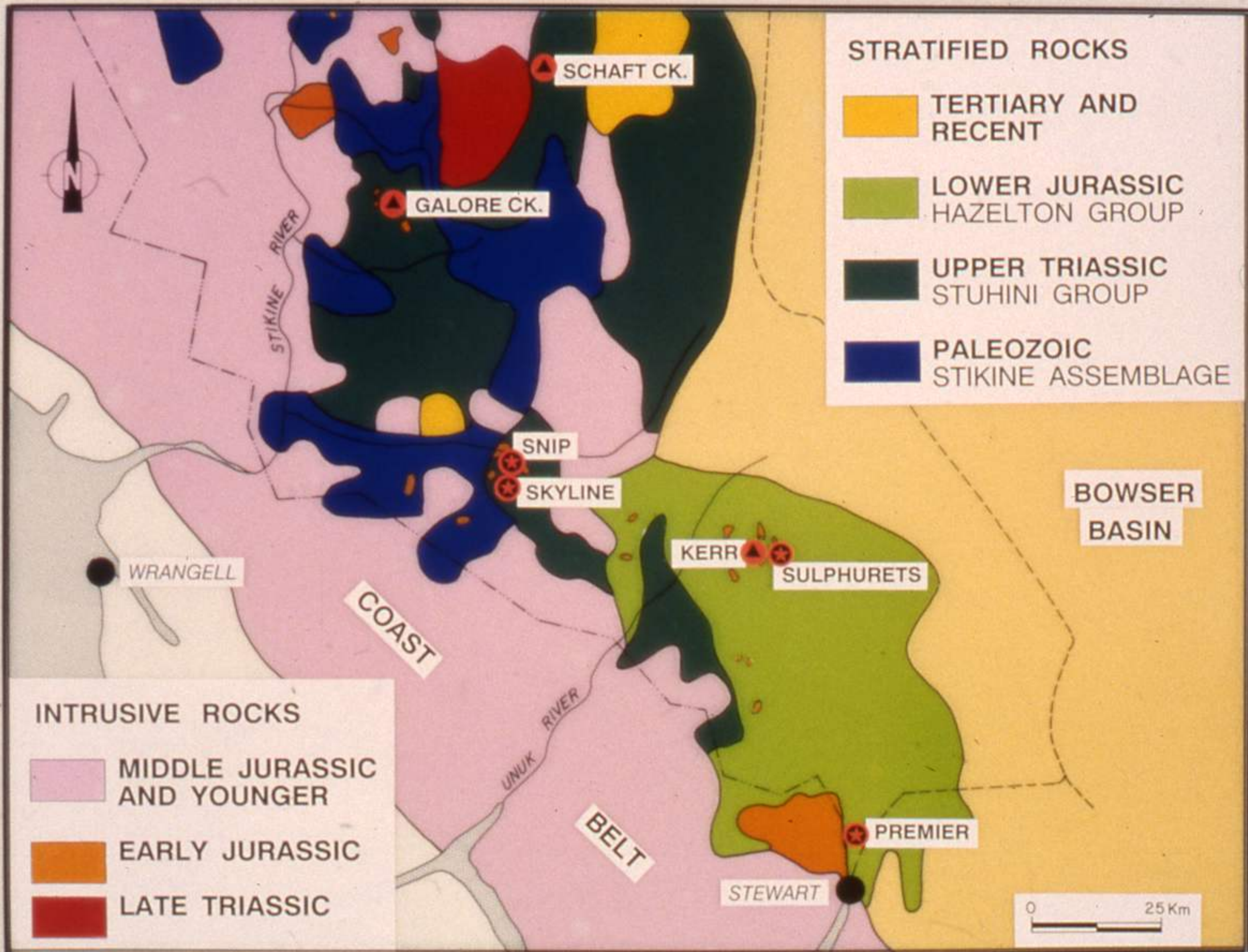
STRATIFIED ROCKS

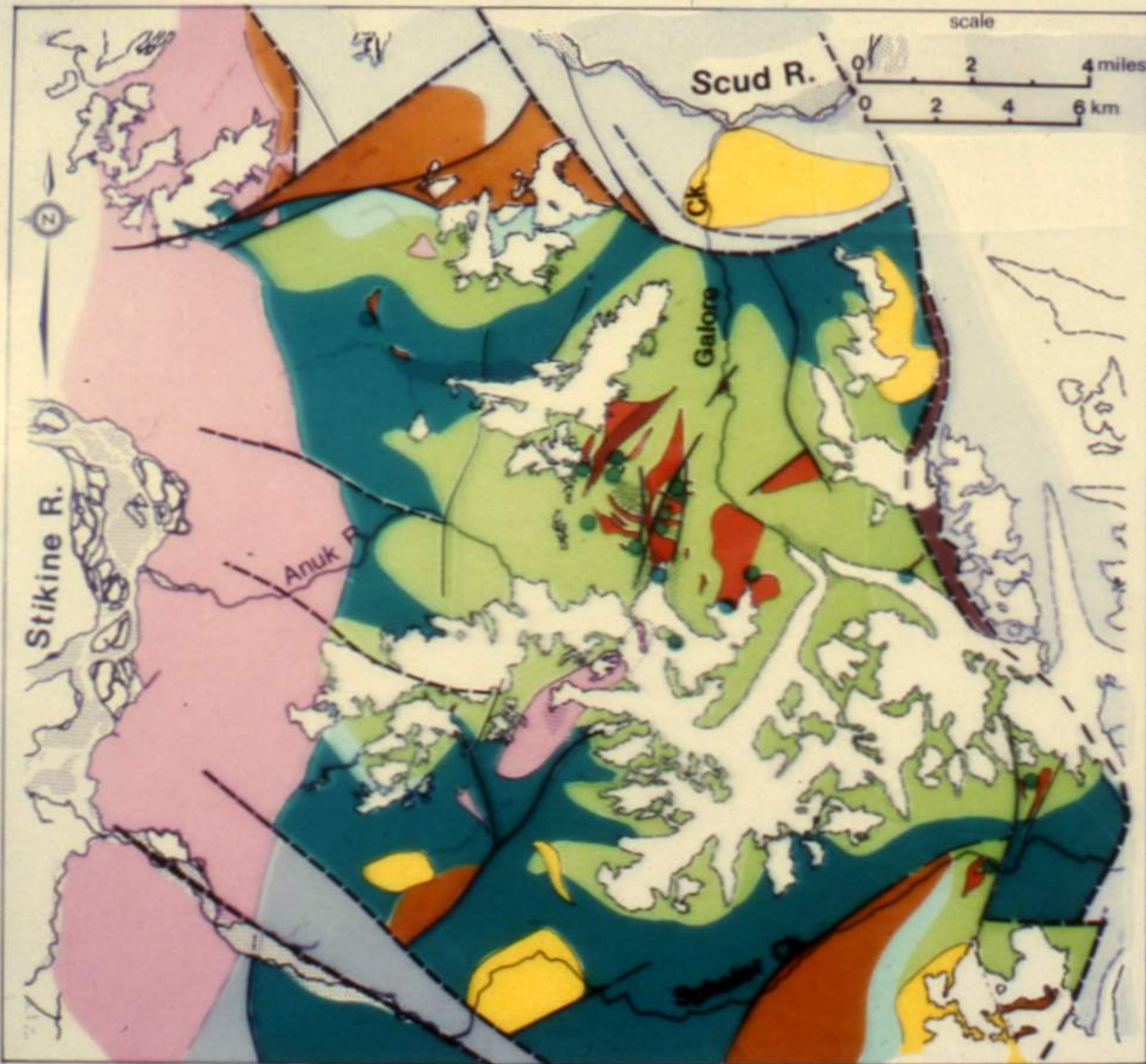
- TERTIARY AND RECENT
- LOWER JURASSIC HAZELTON GROUP
- UPPER TRIASSIC STUHINI GROUP
- PALEOZOIC STIKINE ASSEMBLAGE

INTRUSIVE ROCKS

- MIDDLE JURASSIC AND YOUNGER
- EARLY JURASSIC
- LATE TRIASSIC







INTRUSIVE ROCKS

- QTZ MONZONITE, GRANODIORITE
- DIORITE, QTZ DIORITE
- SYENITE
- MINERAL DEPOSIT

BEDDED ROCKS

- UPPER TRIASSIC
- SHALE, SILTSTONE
 - VOLCANICLASTIC SEDIMENTS
 - ALKALI BASALT, TRACHYANDESITE, TRACHYTE, PHONOLITE ; TUFFS, BRECCIA
 - BASALT, ANDESITE ; FLOWS, BRECCIA
- MIDDLE TRIASSIC
- SHALE
- PERMIAN
- LIMESTONE
- PERMIAN OR OLDER
- PHYLLITE, SCHIST
 - MINERAL DEPOSIT





Stewart

Vancouver

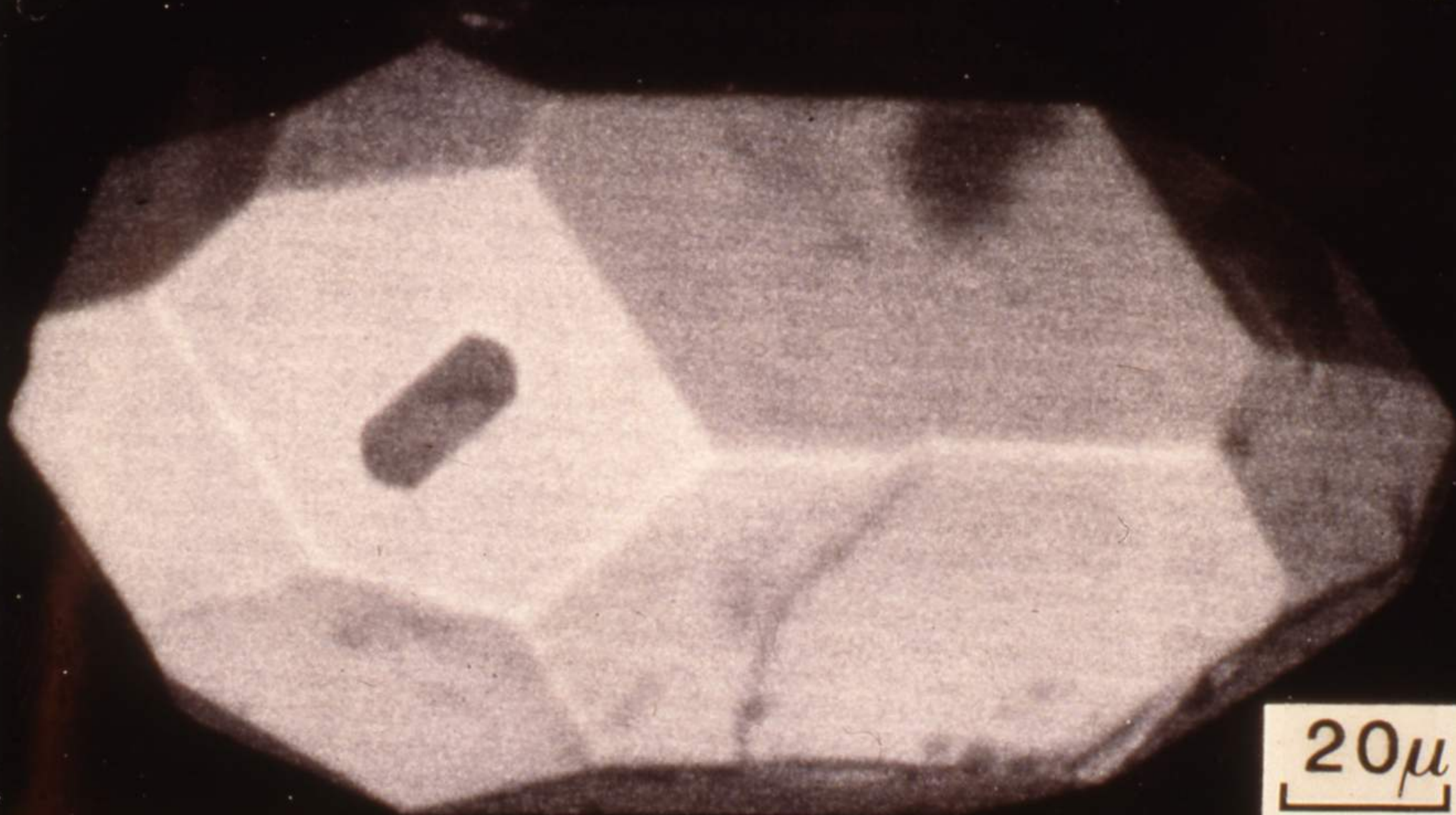
1644

Mt. Olympus 2424

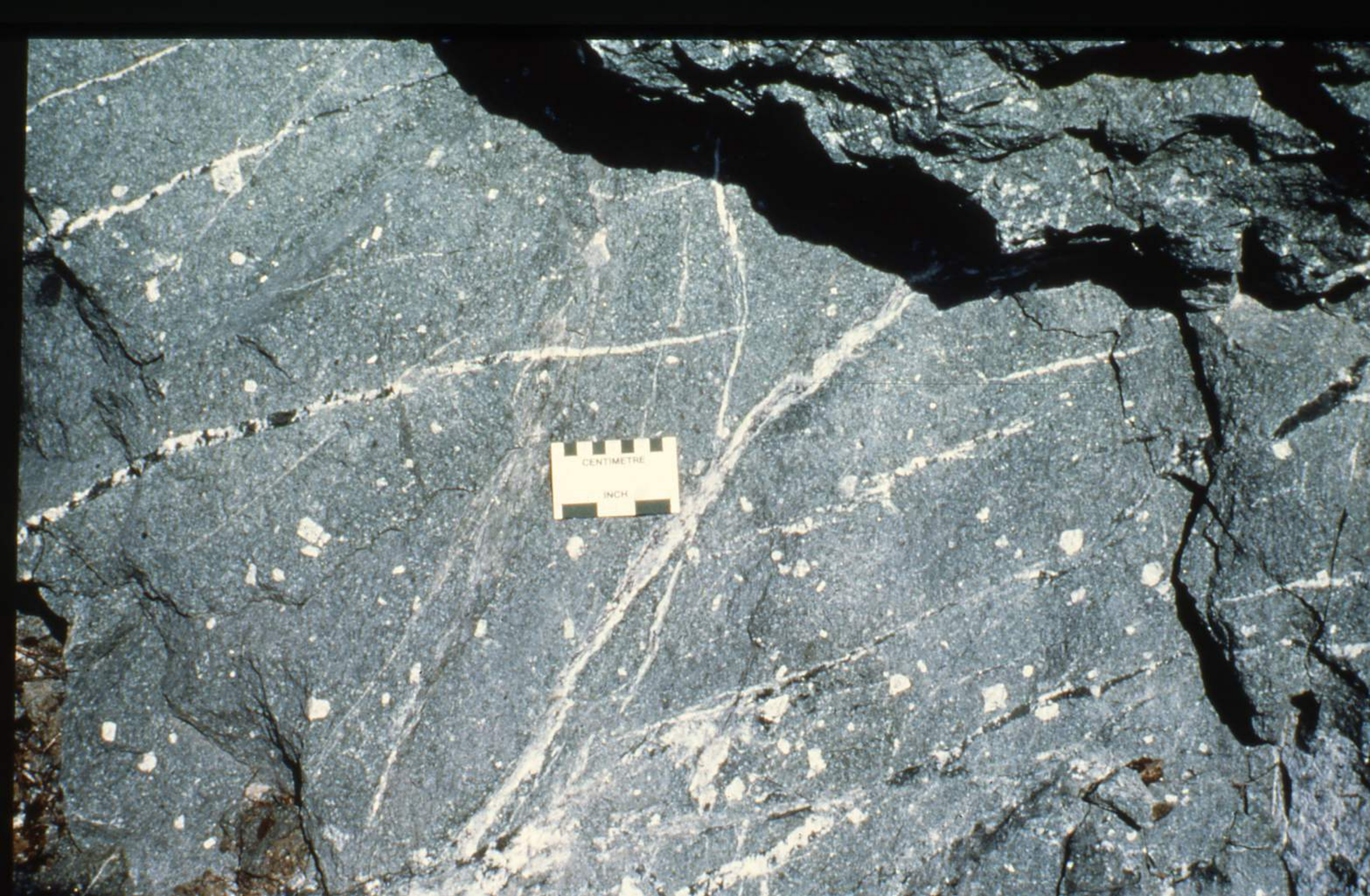


CM

D



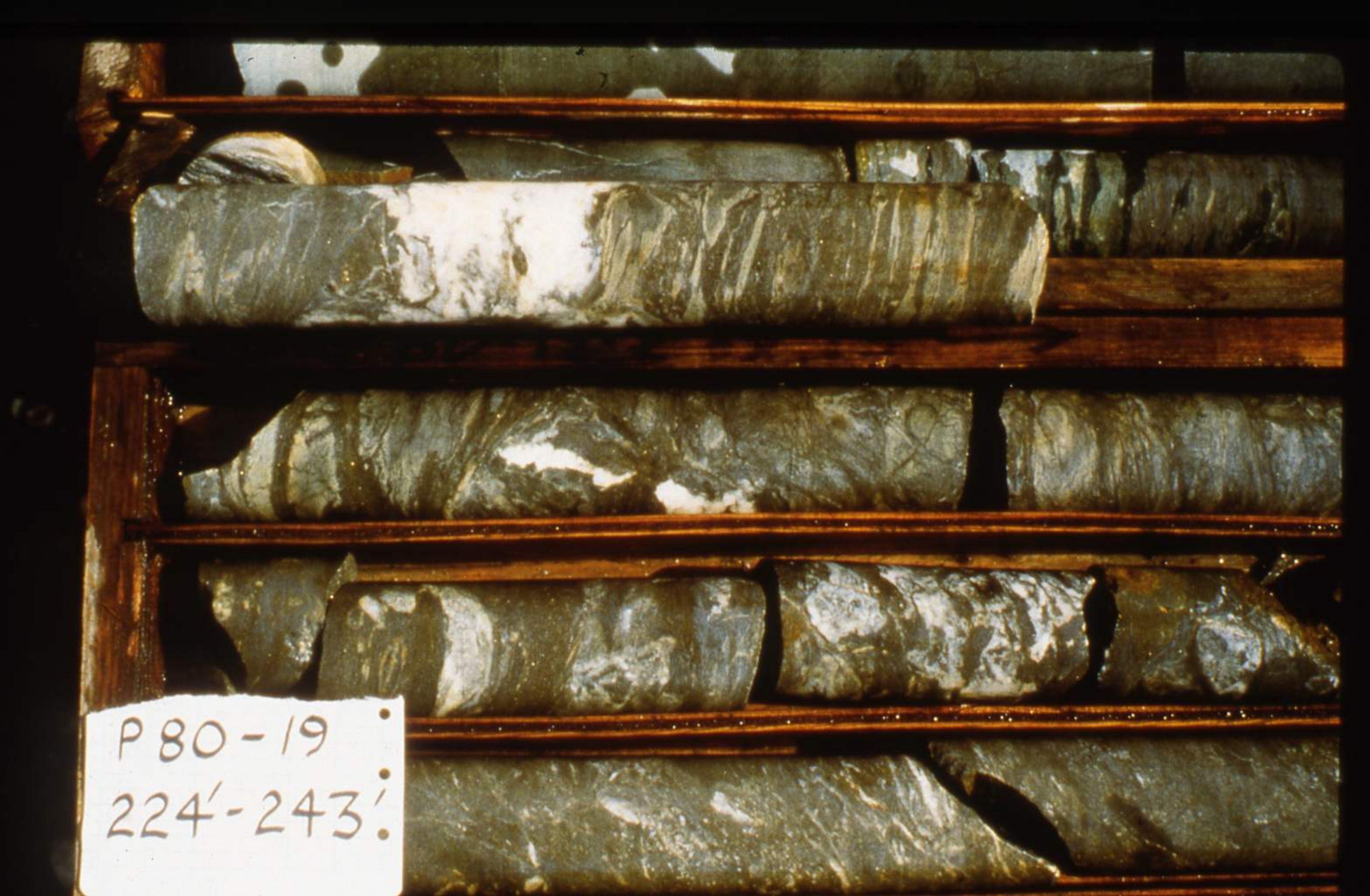
20 μ







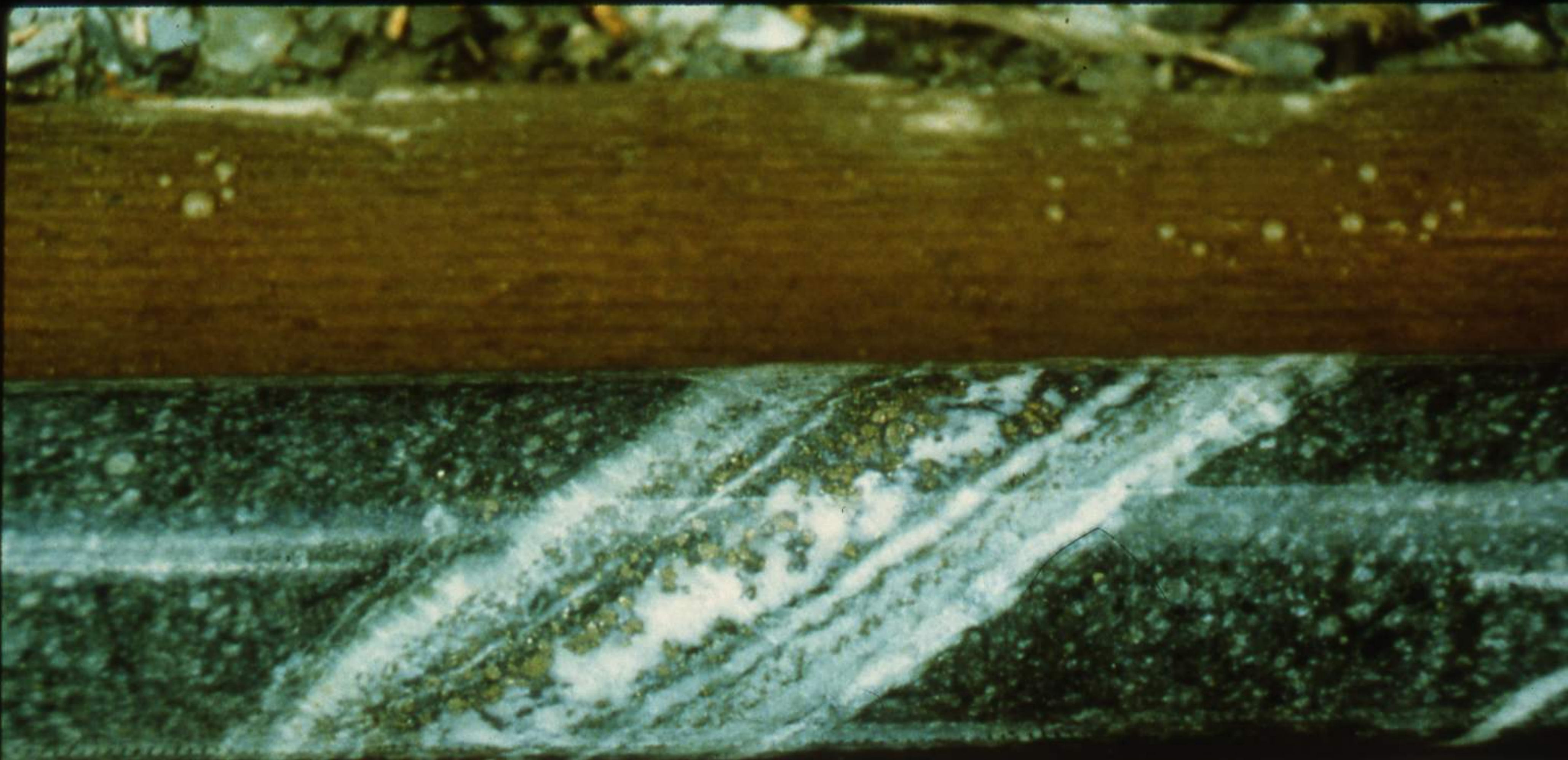
CENTIMETRE



P 80-19
224'-243'







8

P. R. APP'D.

P85-51

250' - 251.5'

13

14



CENTIMETRE
INCH











TMC 009



FURTHER RESEARCH

1. RELATIVE & ABSOLUTE AGES

2. STRUCTURAL CONTROLS & HISTORY

3. FLUID INCLUSION STUDIES

*PROBLEM - METAMORPHIC OVERPRINT

SKYLINE

RESERVES:

0.622 mT 19.5 g/T Au
0.75% Cu

ACKNOWLEDGEMENTS:

SKYLINE EXPLORATIONS LTD.

GALORE CREEK

RESERVES:

125 mT

1.06 % Cu

0.40 g/T Au

7.7 g/T Ag

ACKNOWLEDGEMENTS:

B.C. GEOLOGICAL SURVEY:

.....ANDRE PANTELEYEV

SNIP

RESERVES:

1.43 mT 21.9 g/T Au

ACKNOWLEDGEMENTS:

COMINCO **RON NICHOLS**
..... **IAN PATERSON**
..... **BILL WOLFE**

SULPHURETS

RESERVES:

0.775 mT

12.1 g/T Au

786 g/T Ag

ACKNOWLEDGEMENTS:

NEWHAWK	FRED HEWITT
ESSO	RON BRITTEN
GSC	ROD KIRKHAM

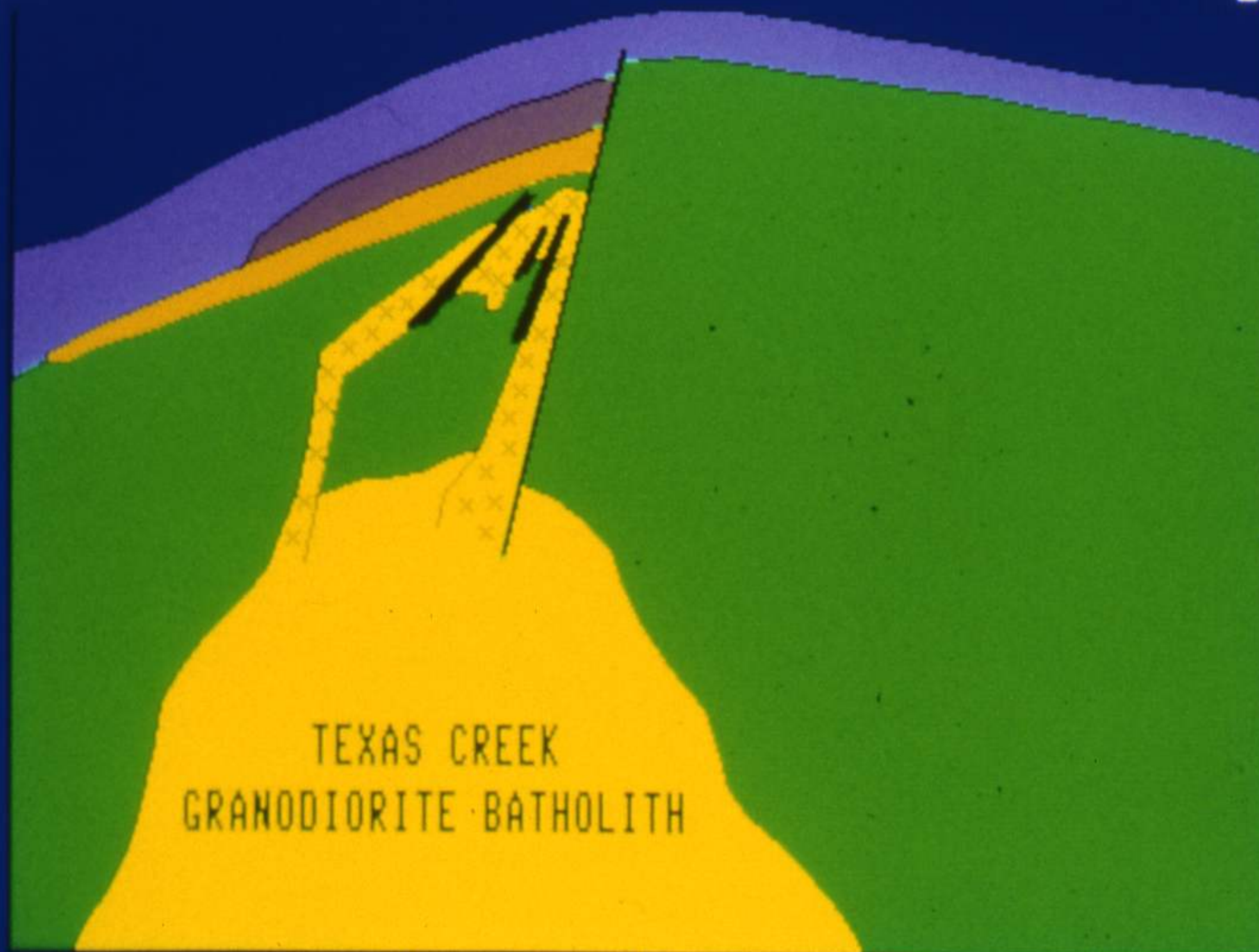
PREMIER MODEL

1. SYNVOLCANIC STRUCTURES
2. HIGH LEVEL:
2-FELDSPAR PORPHYRY DYKES
("PREMIER PORPHYRY")
3. EPITHERMAL VEIN
CHARACTERISTICS

PREMIER MODEL

WEST

EAST



-  TUFFS
-  MAROON TUFFS AND FLOWS
-  DACITE PORPHYRY FLOWS
-  ANDESITE FLOWS & TUFFS
-  PREMIER PORPHYRY
-  ORE/STOPE

KERR

RESERVES:

60 mT

0.84 % Cu

0.34 g/T Au

2.05 g/T Ag

ACKNOWLEDGEMENTS:

SULPHURETS GOLD CORPORATION

..... BOB HEWTON

..... BRIAN BUTTERWORTH

SNIP - TWIN ZONE VEIN MINERALOGY

Gangue

Calcite
Ankerite
Quartz
Chlorite
Biotite
K-Feldspar
Sericite

Sulphides/Oxides

Pyrite
Pyrrhotite
Magnetite
Ilmenite
Arsenopyrite
Sphalerite
Galena
Chalcopyrite
Tetrahedrite
Molybdenite
Cosalite

Tellurides

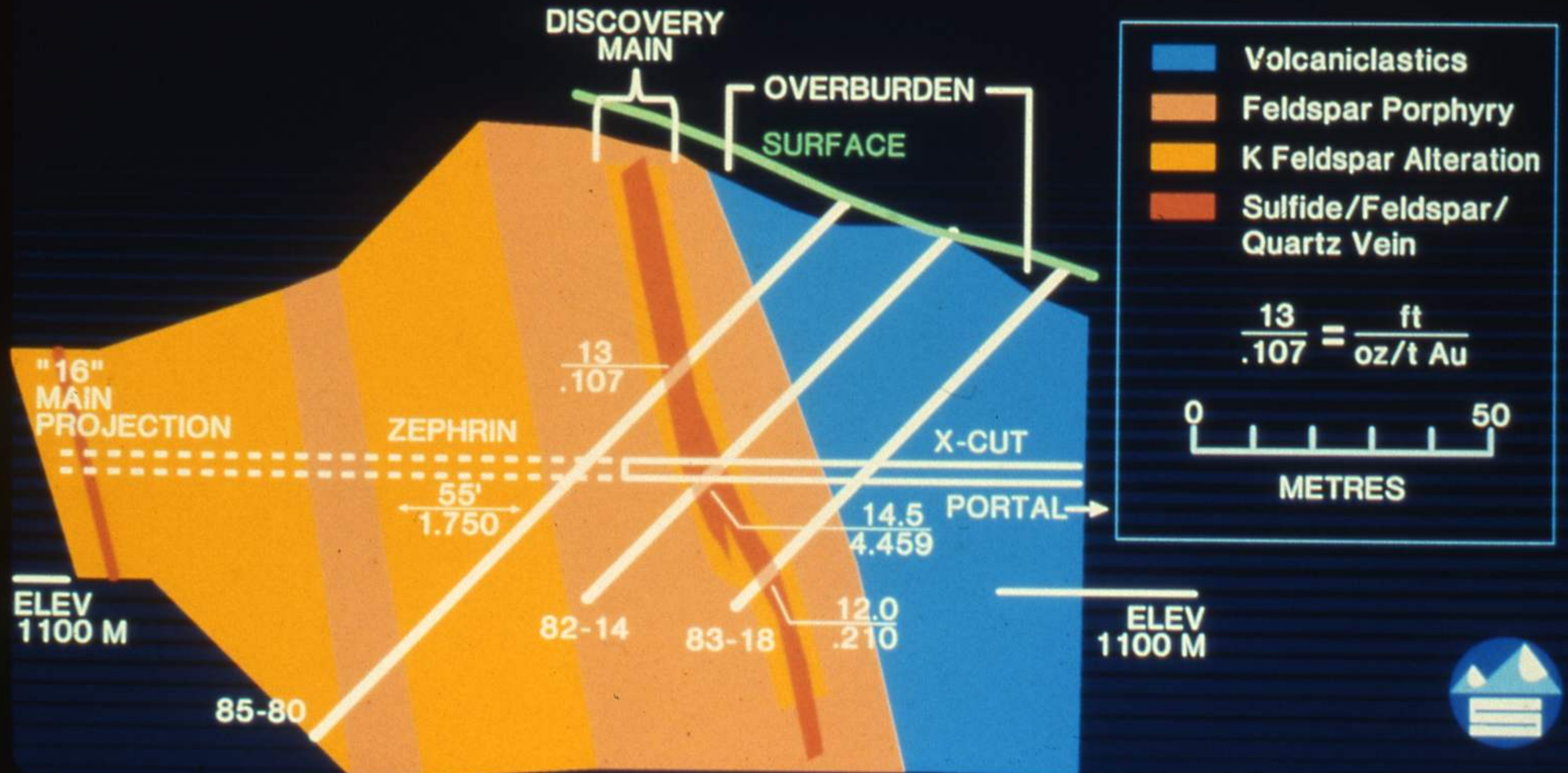
Telluro bismuthite
Hessite
Volynskite

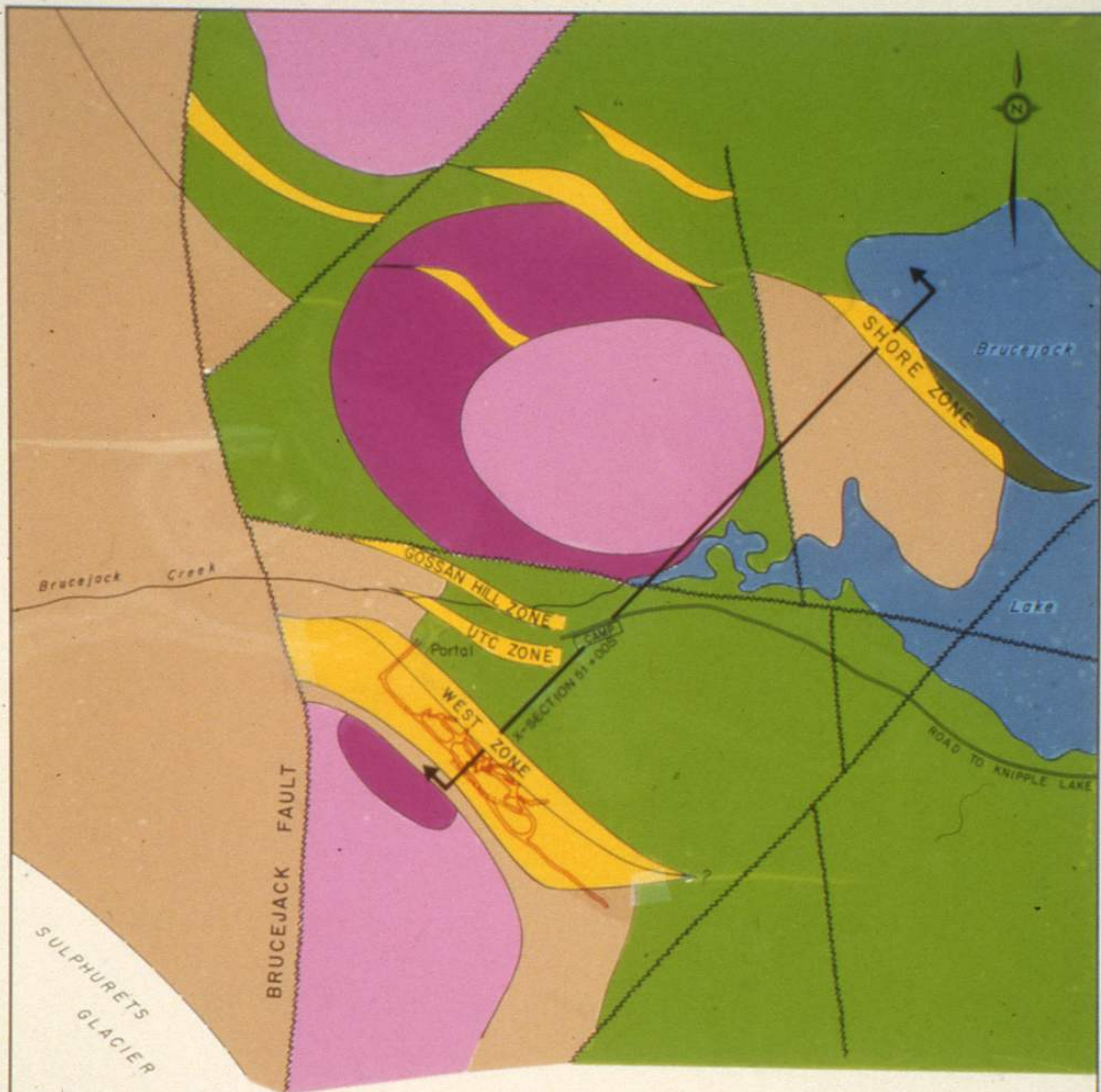
Native Au

SIMPLIFIED GEOLOGY

Stonehouse Gold Deposit

Section 9700 Looking West - 135°
East Discovery - Zephrin Zones

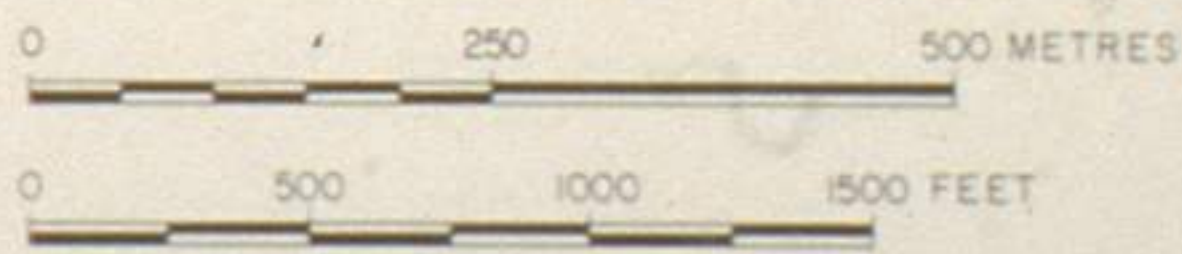




Legend

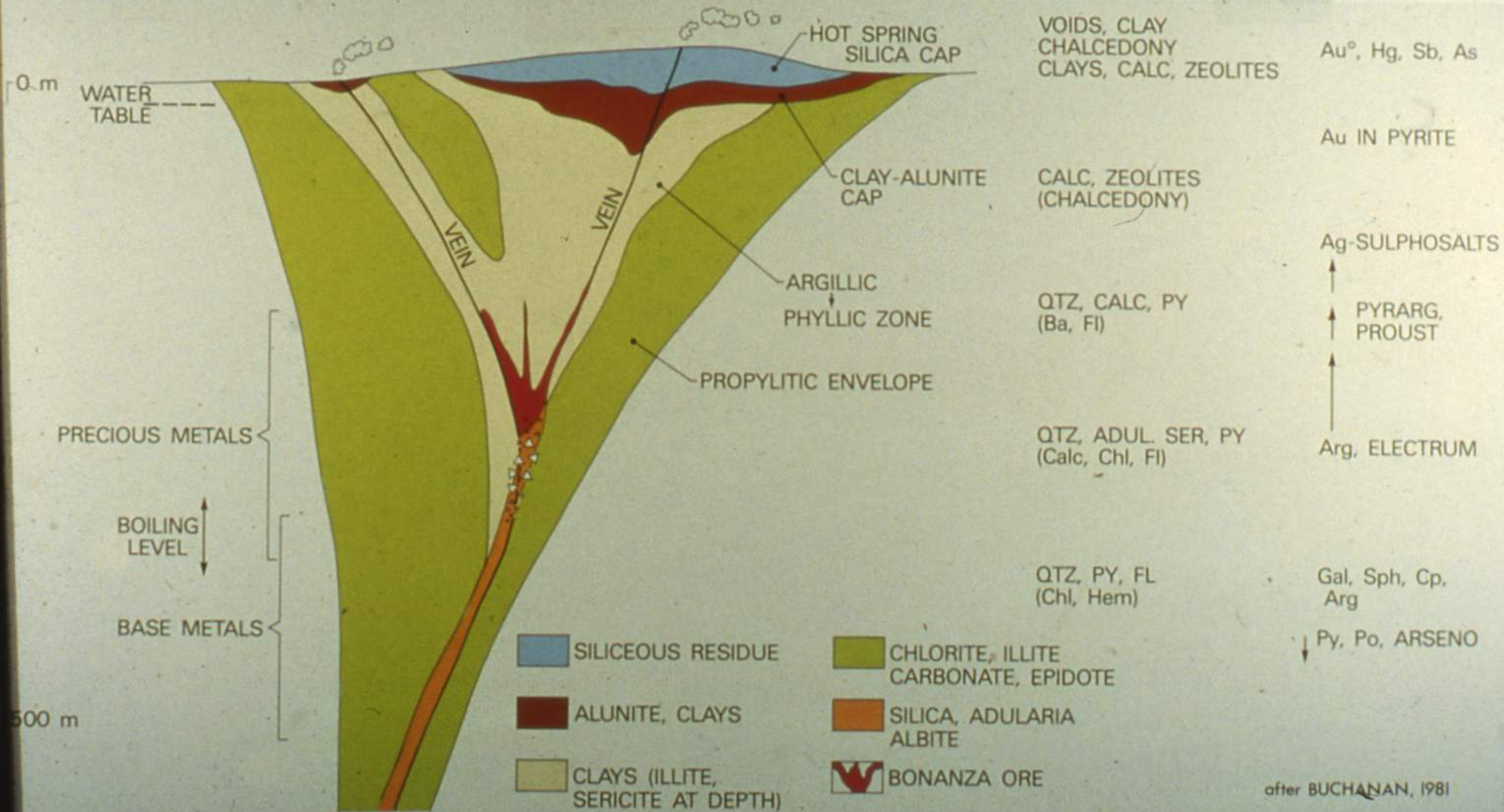
- Quartz Stockwork
- Syenite
- Plagioclase Porphyry
- Volcanics
- Sediments
- Geological contact
- Fault

NEWHAWK GOLD MINES LTD.
SULPHURETS PROPERTY
BRUCEJACK AREA
Geology



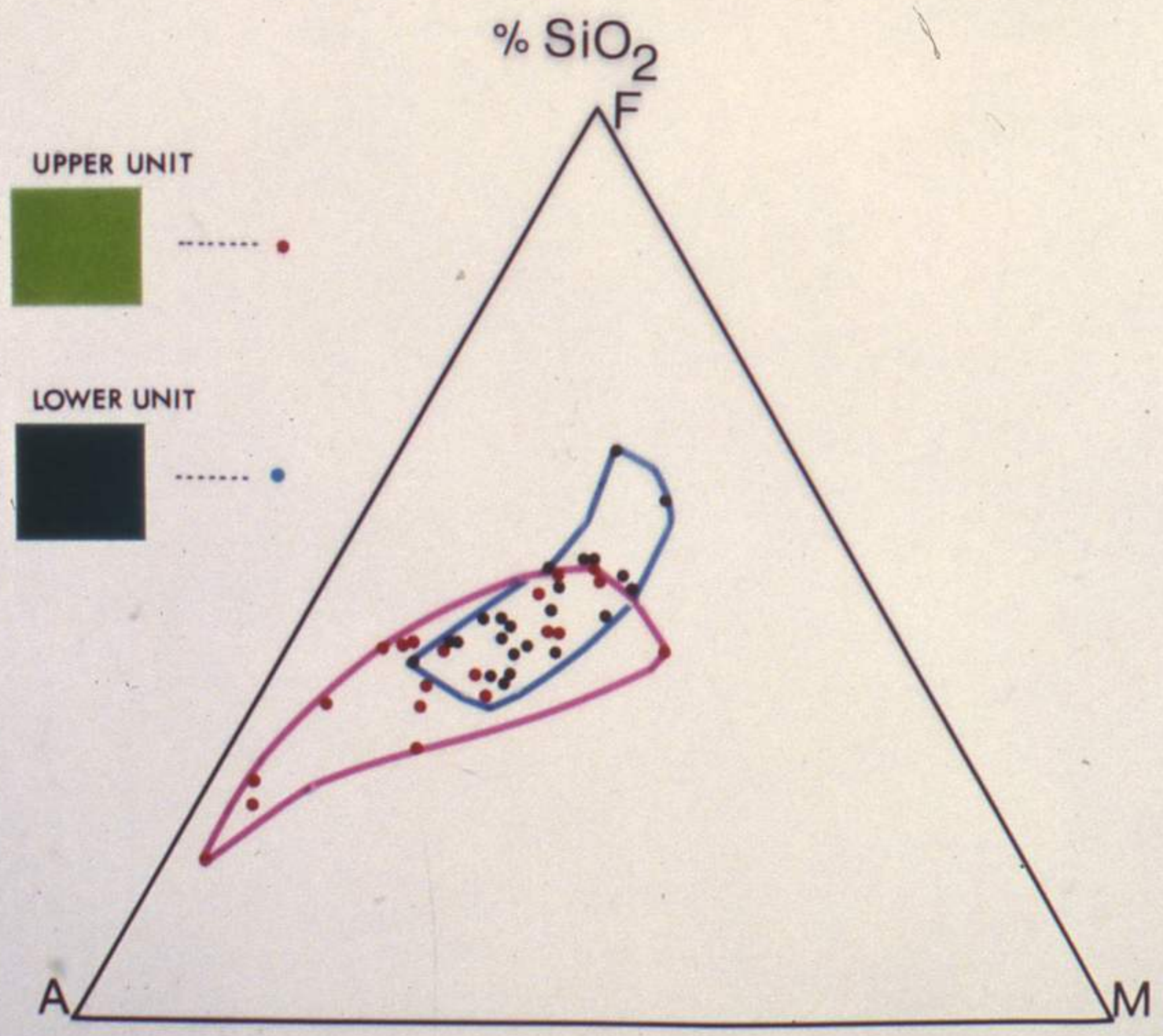
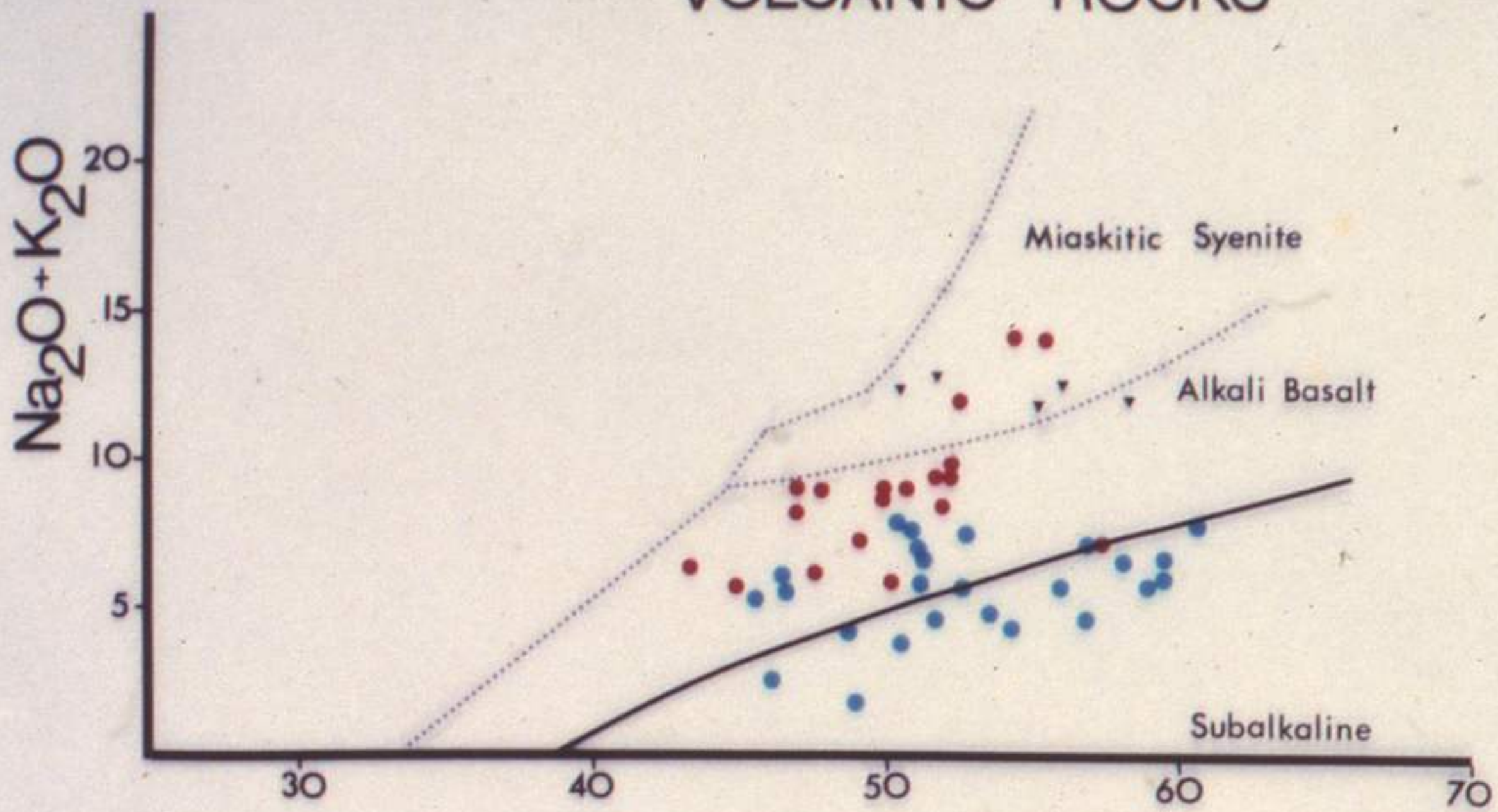
NOVEMBER 1988

IDEALIZED SECTION, EPITHERMAL BONANZA DEPOSIT (CORDILLERAN EXPLORATION MODEL)



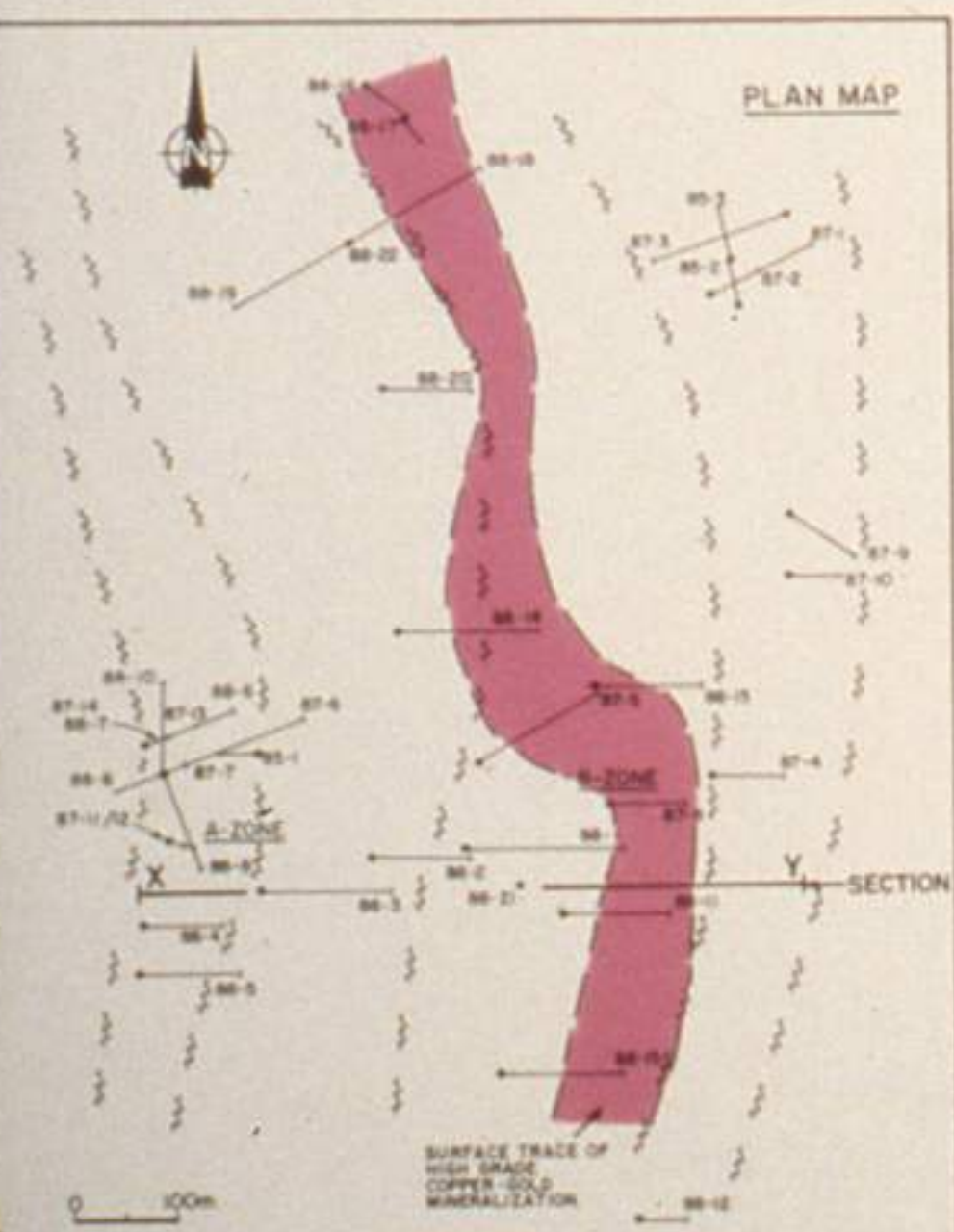
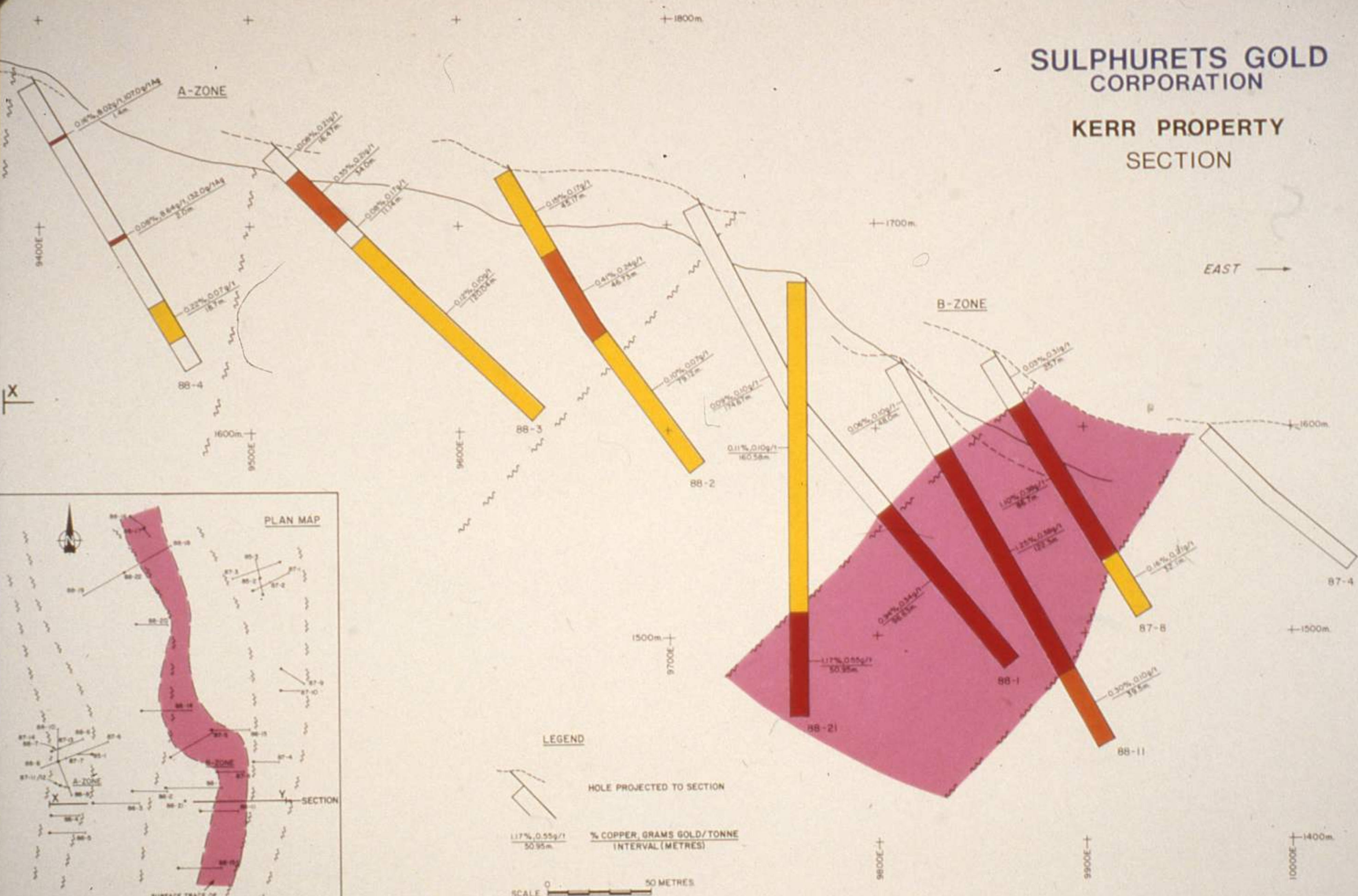
after BUCHANAN, 1981

VOLCANIC ROCKS



SULPHURETS GOLD CORPORATION

KERR PROPERTY SECTION



LEGEND

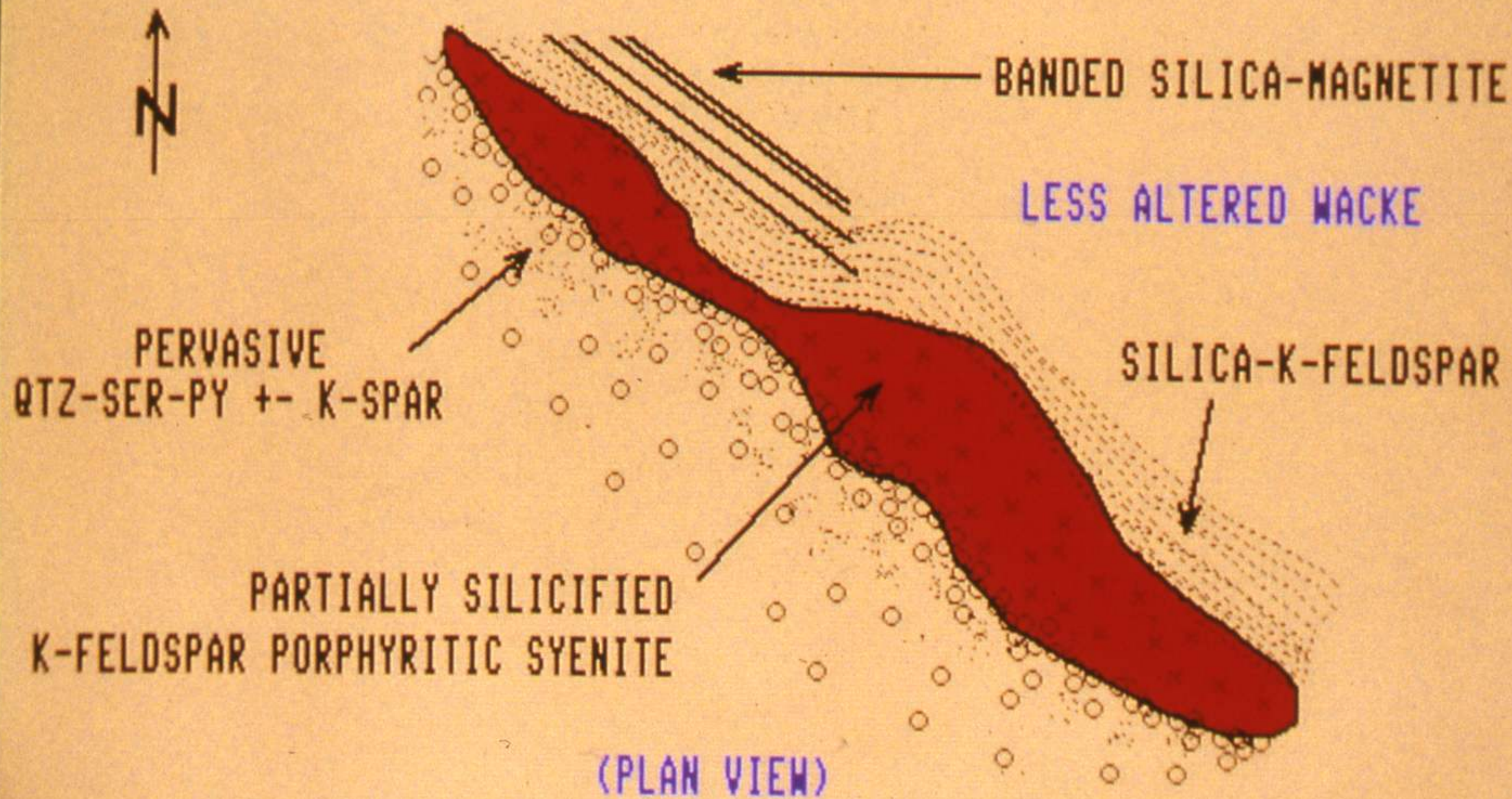
HOLE PROJECTED TO SECTION

1.17% Cu, 0.85g/t Au, 50.95m interval

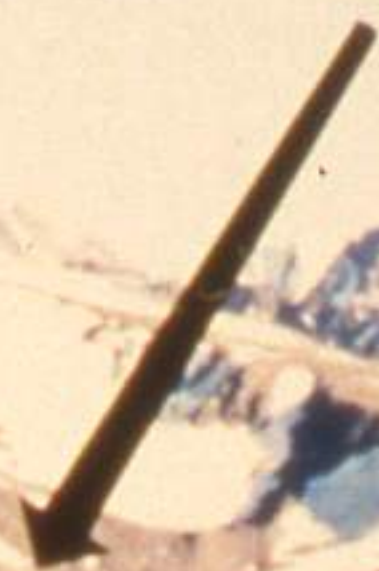
% COPPER, GRAMS GOLD/TONNE INTERVAL (METRES)

SCALE 0 50 METRES

ALTERATION TYPES ADJACENT TO RED BLUFF PORPHYRY



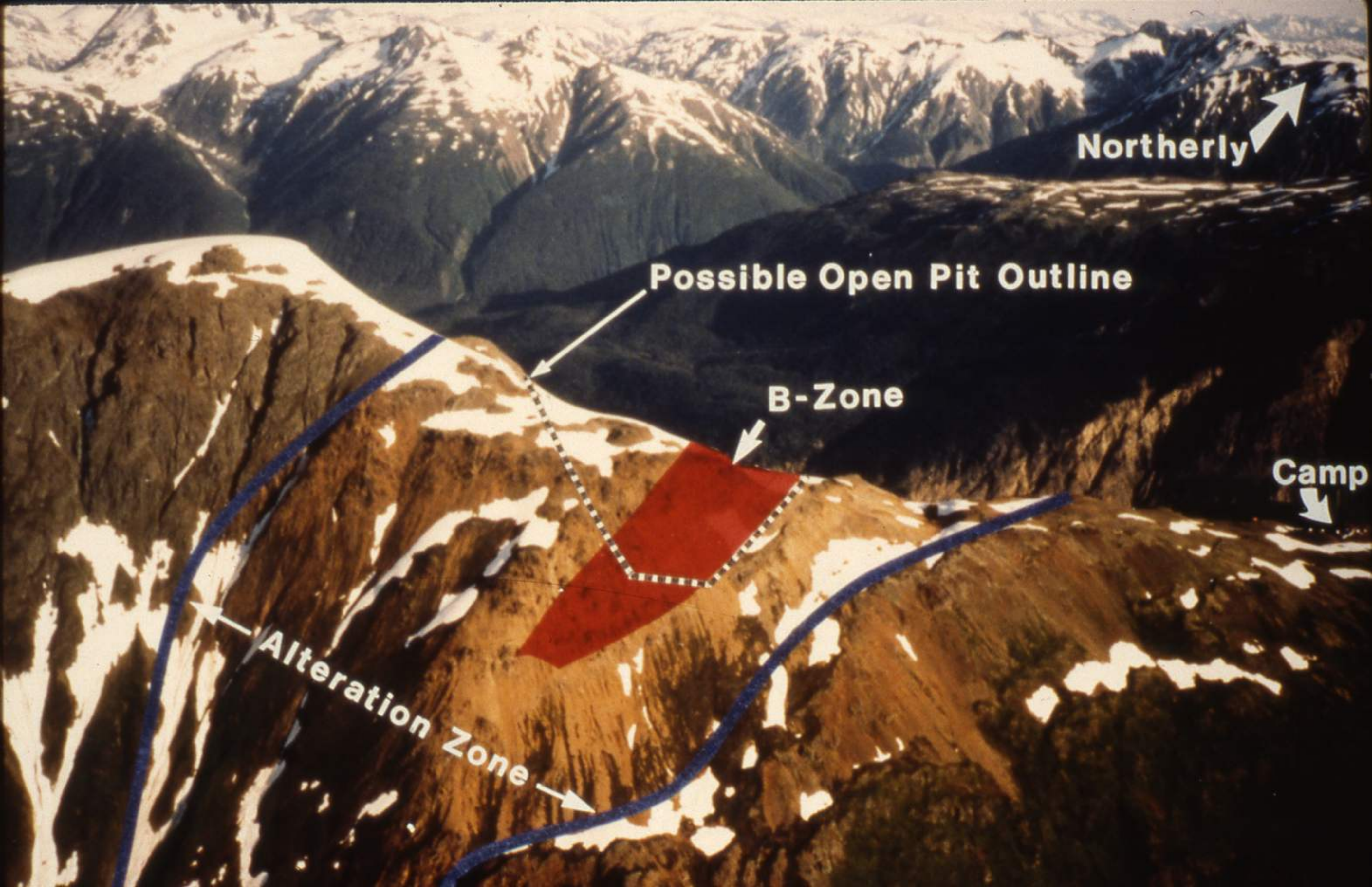
SKYLINE



TWIN ZONE



SNIP



Northerly

Possible Open Pit Outline

B-Zone

Camp

Alteration Zone



1 Cm

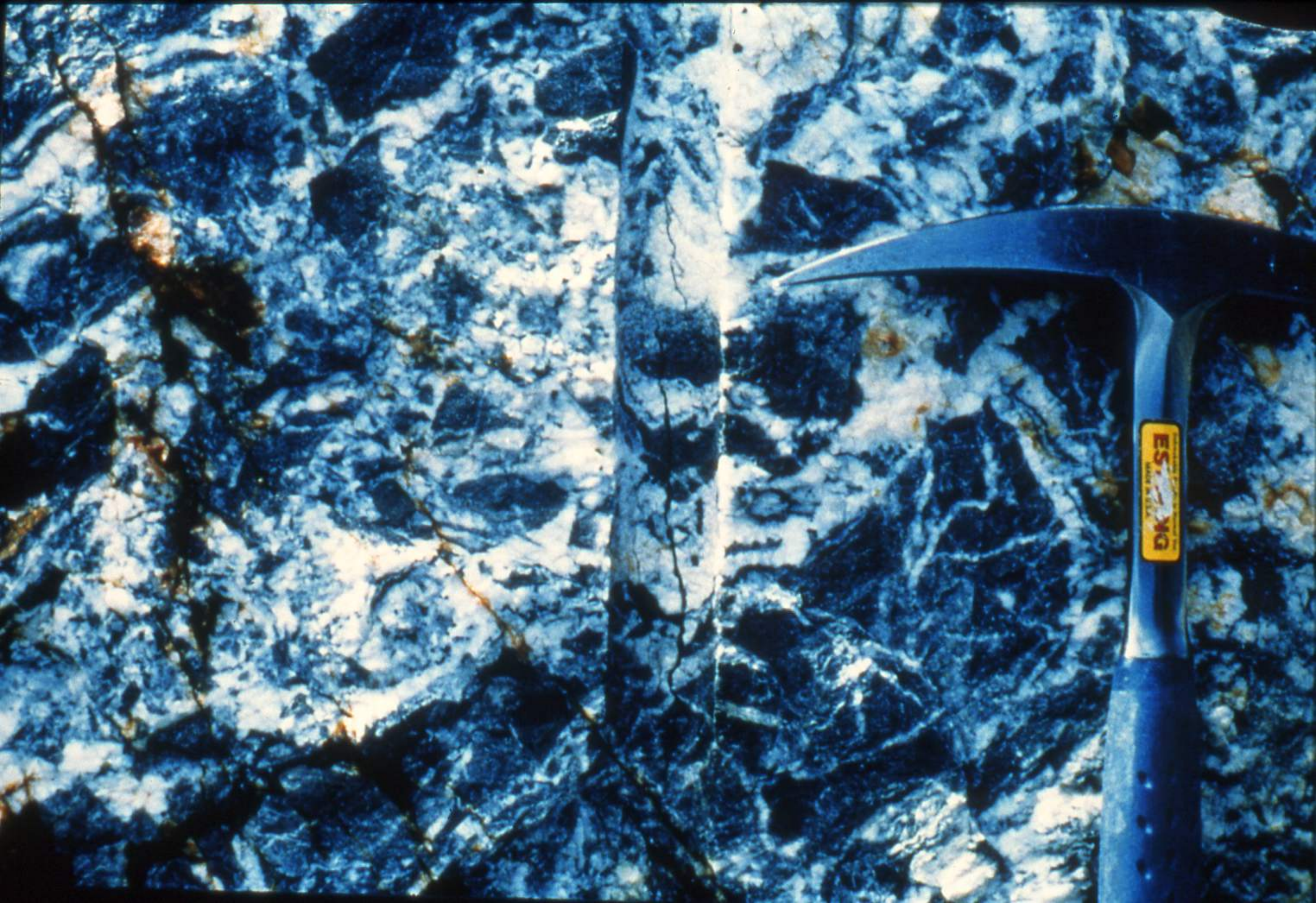


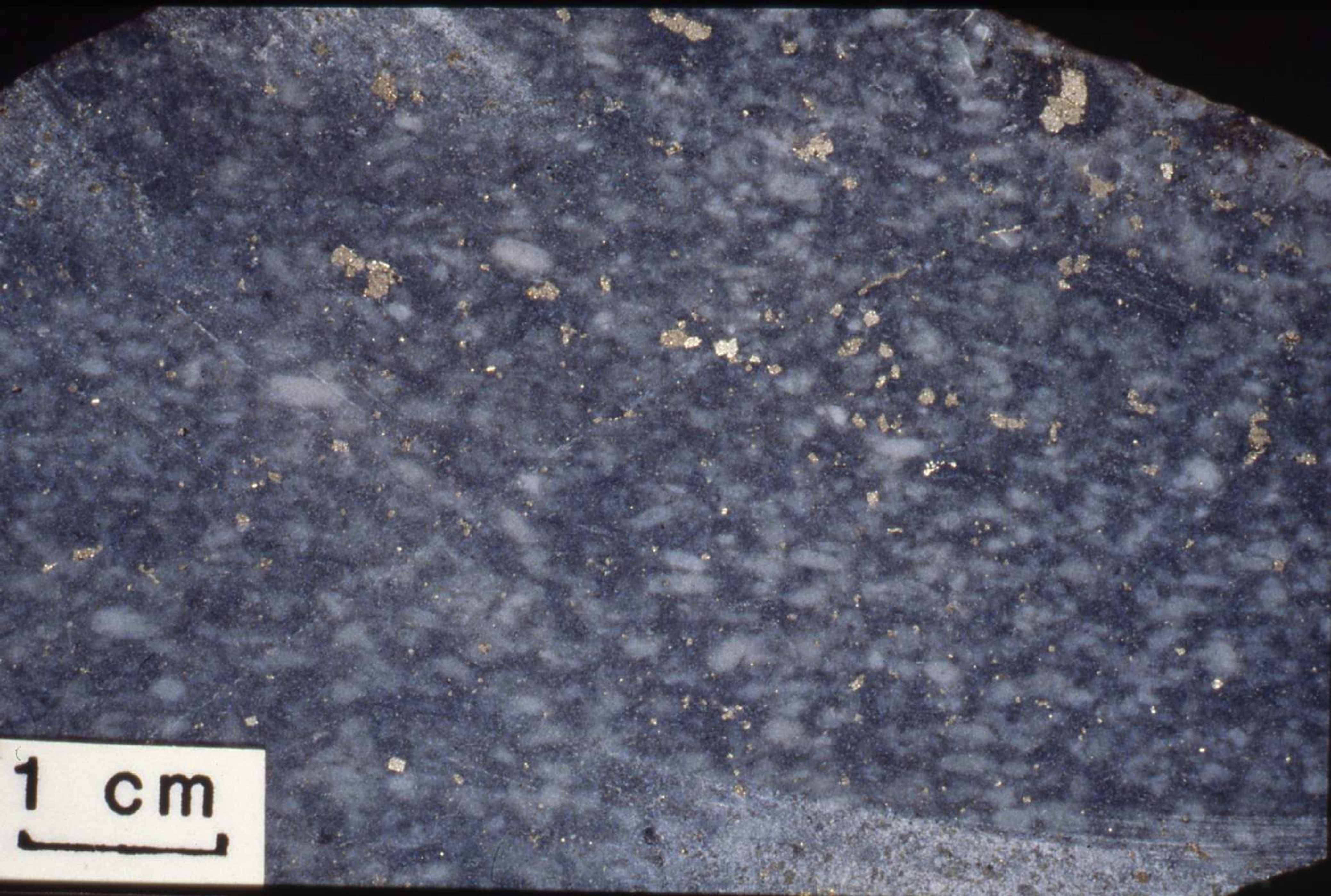




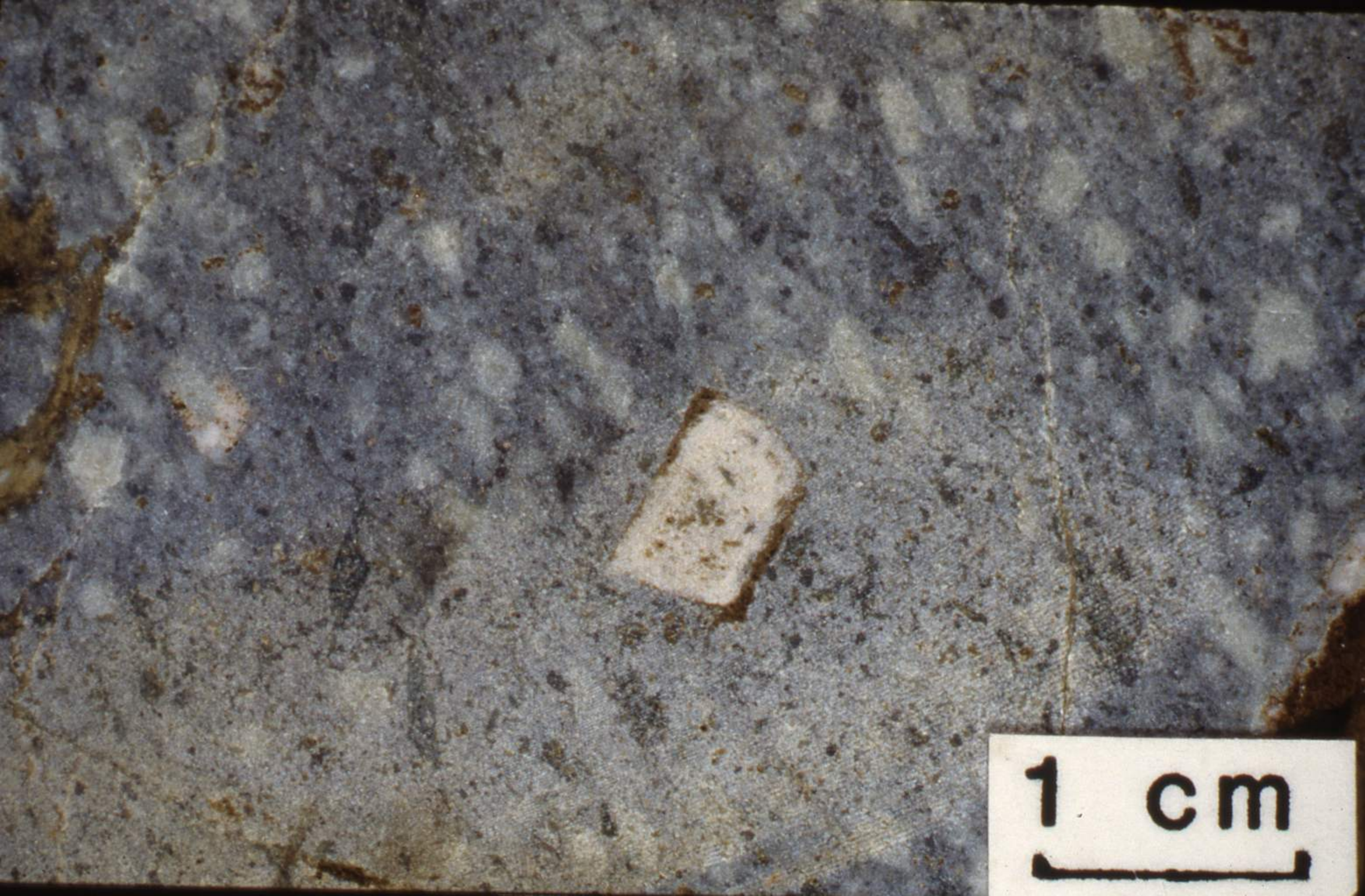
CENTIMETRES







1 cm

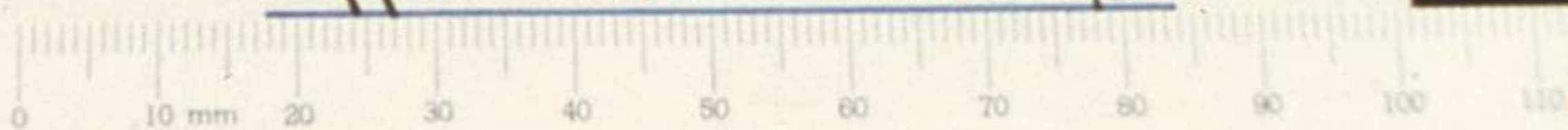


1 cm



Banded High-Grade Gold-Silver Ore.

Upper Mine Workings



WESTMIN RESOURCES LIMITED

P.O. BOX 49066
THE BENTALL CENTRE
VANCOUVER, B.C. V7X 1C4

CL-138
84-32/406'

CL-146
84-30/182'

CL-147
84-30/74'

WESTMIN RESOURCES LIMITED

P.O. BOX 49086
THE BENTALL CENTRE
VANCOUVER, B.C. V7X 1C4

MILLIMETRES

INCHES



85-51

237'

