

Afton Tour

June 17/82

Iron Mask

older in core

zoned Hybrid - Gabbro - Diorite

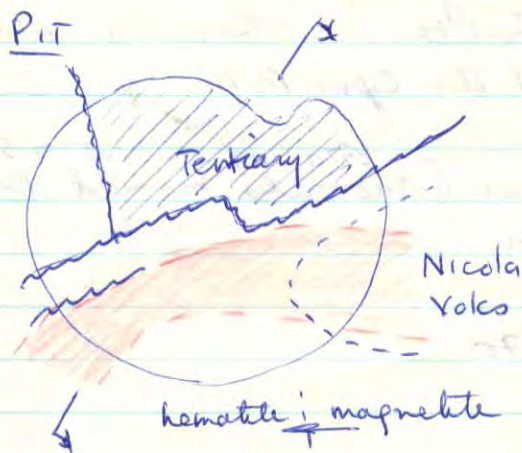
Pothook Diorite

appx same  
age[ Cherry Ck - diorite → monz. → syenite  
Sugarloaf ✓

Intusions emplaced along NW - N trending faults  
then faults reactivated.

Mineralisation is in Cherry Ck + Sugarloaf.

Afton - at NW end of batholith  
- intersection of structures



\* Afton hypogene slightly richer than "supergene"

\*\* confusion caused by red fs stain (plagioclase)  
diorites look like syenites!

AFTON

## ORE

Native copper / lesser chalcocite

Hypogene mineralogy: cpy / bn / magnetite / minor pyrite  
More bn on hanging wall.

Oxidation due to subaerial erosion

Supergene very deep - generally 300 m, deepest 450 m.

Alteration - no systematic pattern.

Pervasive propylitic

Local Kfs alteration (some biotite)

No real phyllic zone

Pyrite zone to the south

HISTORY

- 1920's several underground mines in Centre of Iron Mask batholith - there is a shaft - (Pothook) SSE of the Open Pit.

- Surveys - geochemical (anomaly moved 1200' SE)  
- geophysics

- Discovery hole 1970

RESERVES - 30 MT @ 1% Gold + 0.01502 Au + Silver

# AFTON

deposits to East are all hypogene  
 Comet Kraen ~ 3MT  
 Iron Mask ~~road~~ on road



FILE

## Lorne band

Native Cu ± cct in pit

oldest rocks in center, younger rx along margins  
 street cut

pit mapping - gray dia + ~~pink~~ brown diorite  
 /  
 limonite stained fs

Ksp or alt zones diff. to distinguish from primary

Tert Rx - highly folded

NW trending axes

contacts with R rocks almost always faulted

Altn - mainly propylitic } timing relationships  
 - potassic - patchy } shows both <sup>old</sup> older + younger

phyllitic - minor component - fault cut } produces  
 then siltstone on top of ore } leucodiorite  
 magnetite - prominent - veins

Gold	=	1	1
Silver	=	10	4
Copper	gene		gene
Hypogene			

Hypogene 1.2 - 1.5% Cu  
 gold sl. higher

Nicola index (roof pendant)  
 - mineral -

Mineral - stockwork 80% dissemin 20%

supergene - Native Cct - up to 1500' deep

Stage 2 pit still mostly in ~~the~~ supergene zone

Hypogene - Br Cpy Tetrahedrite Tennantite (higher As)

Pyrite zone

gen 2 - 3%

off to the south  
 quits just south of the ore

shallower in the east



recovery  
 85-90%  
 gold ~ 75%

## Faults

NE, NW + W trending

Ground prep

control loc of intrusions

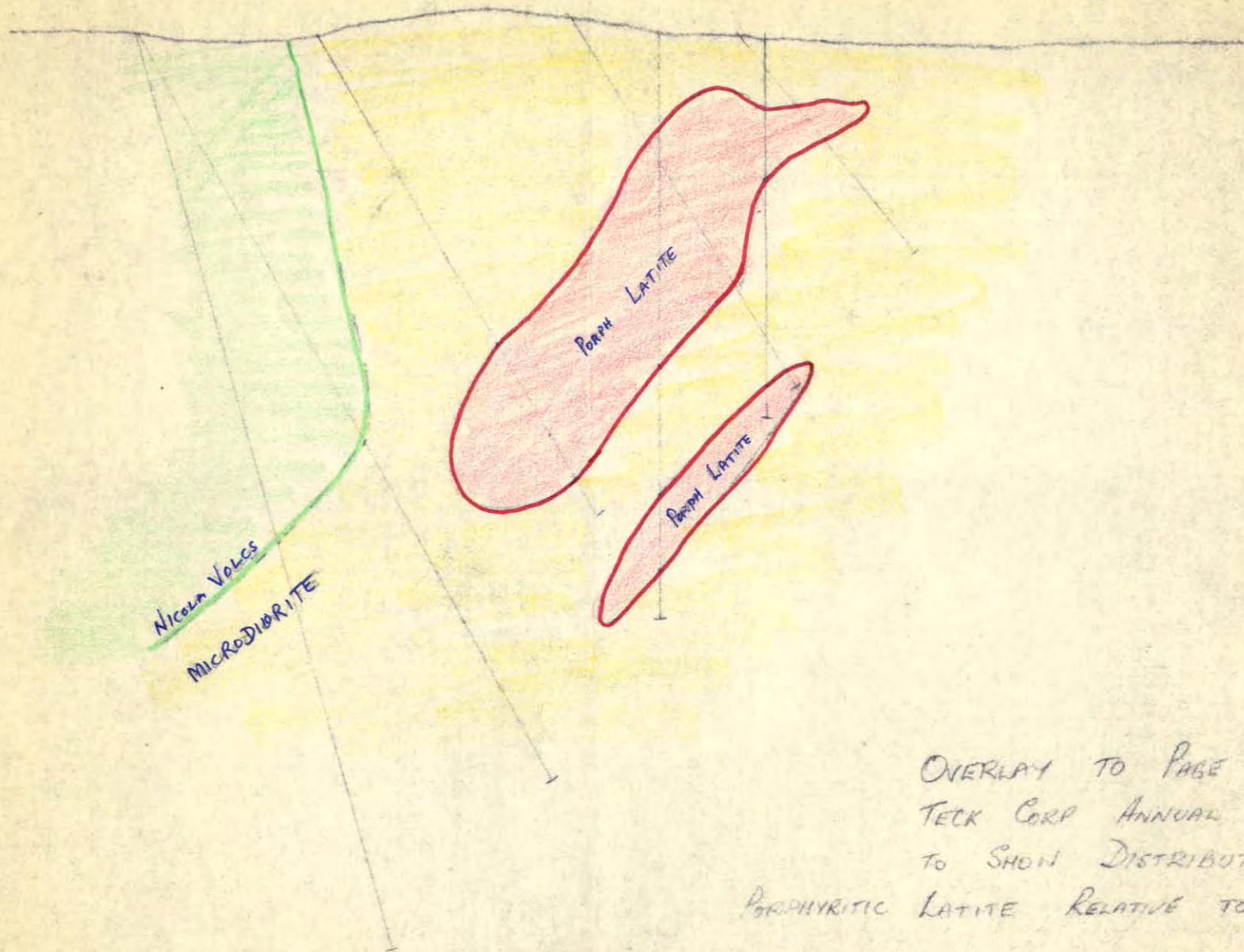
active R a earlier → Tertiary

Ore narrower at depth but bottom not yet defined

OPEN PIT 5 years more

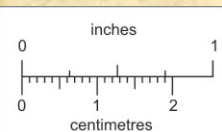
Underground - can see 10 MT but open - economics critical to ore

first few years could be supergene



OVERLAY TO PAGE 22 OF  
TECK CORP ANNUAL REPORT-1973  
TO SHOW DISTRIBUTION OF  
PORPHYRITIC LATITE RELATIVE TO ORE

AF TON DEPOSIT



BRITISH COLUMBIA  
GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.