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CHU CHUA

Feb 1980 ¹⁹⁸⁰ GAC

SLIDE

LEFT 1 LOCATION

BC Map

Chu Chua Mountain 20 km North of Barriere
at \approx 1800 m elevation

LEFT 2

Geol Map Regional GSC

How IT WAS FOUND AND ACKNOWLEDGEMENTS

~~LEFT 2~~

TECTONIC SETTING

In Omineca Crystalline Belt just east of Intermontane Belt

LEFT 3

GEOLOGICAL SETTING

(Geol Map Regional) - Vic

The deposit is in the ^{Mississippian} Fennell Formation BELOW the transition zone into overlying Eagle Bay Formation.

RIGHT 1

STRUCTURAL SETTING

Via X section

- On the west limb of a large anticline
- the layering is subvertical at the deposit

- Interest initially (1977) aroused by Copper anomaly on south slope of Chu Mtn (Vestor)
- Gossan transported so prospected up slope
- Smaller gossan next to massive magnetite
- DRILLED BY CRAIGMONT 1978 (Nels Vollo)
- SO FAR 40 HOLES 5775 metres of drilling

RESERVES

2 Million Metric Tonnes
2% Cu 0.4% Zn 0.49g/tonne Au 8gm/tonne Ag

ACKNOWLEDGE - Nels Vollo } discussions and
- Mike Kenyon } cooperation

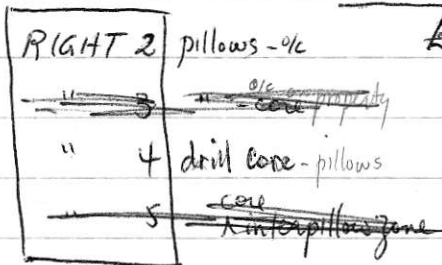
SLIDES

LEFT 4
Drill Holes

Drilling pattern - most holes at
-50° toward the east - a few
-50° west

LEFT 5
Geol. Plans

Based on the diamond drill information
plans of the deposit drawn up at
1700 1750 ± 1800 m. levels (actually
sections because ~~bed~~ layering subvertical)
mineralised zone ENCLOSED IN



~~Enclosed in~~ pillow basalt, massive to
porphyritic basalt and flow breccia
~~with local chert layers~~

RIGHT 6

Basalt block in chert chert layers - massive to bedded
some with blocks of basalt

RIGHT 7

chert - arg. * FOLIA *

- chert argillite * FOLIATION *

RIGHT 8

chert in tuff

- bedded chert in cherty tuff

"ABOVE" IN THE TRANSITIONAL ZONE

RIGHT 9

disrupted chert

- disrupted chert in silic. argillite

RIGHT 10

chert cgl

- chert pebble conglomerate
(with QFP fragments - some QFP outcrops
to west)

RIGHT 11

QFP Bx

- Qtz Fs Porphyry Breccia

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Move back to the mineralised zone

RIGHT 12
MS

Down hole to right



Good time to mention ~~alteration~~

Alteration and Metamorphism

REGIONAL - GREENSCHIST - Basalts partly altered to chlorite

epidote

quartz

± amphibole (actinolite)

albite (after plagioclase)

→ Basalts west of massive sulphides show little or no hydrothermal overprinting on the regional metam. assemblage

→ Basalts ^{immediately} east of or enclosed in the mineralised zone are variably bleached and ^{some are} altered to ~~sericite~~ sericiteankerite pervasive chlorite and talc.

MASSIVE ~~SULPH~~ SULPHIDES

Pyrite Chalcopyrite some sphalerite
Minor molybdenite (some galena?)
(Trace to 0.19%)

Other elements of interest include Cobalt
(322 ± 315 for 16 samples) Tin (semi-quant NIL-1000ppm)
and Tungsten? (Trace in semi quant spec).

Gangue Minerals ^{calcite} (carbonate) quartz barite
sericite & epidote

3A

MASSIVE SULPHIDES

Massive to poorly layered

Layers pyrite - grain size
cpy - rich bands

Copper / zinc zonation patterns very
poorly developed

- possibly slight zinc enrichment
on west + at depth

- zinc poor in middle

DEPTH Distal Faces West

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Magnetite lodes

magnetite
 chalcopyrite (near borders)
 ± pyrite
 gangue chlorite ^{talc} ~~carbonate~~ ankerite (dolomite)
 magnetite stilpnomelane

Siliceous, cherty Rock - local heavy pyrite ^{diss. streaks: veins}
 quartz sericite calcite ^{ex cement}
 chlorite (Mg-rich) and ~~for~~ some TALC
 GRAY TO WHITE, FINE GRAINED, OFTEN BXTD, MASSIVE TO
 FINELY LAMINATED (locally)

Move on to some cross sections across the deposit

RIGHT 13

10200N (Section) Mineralisation near base of
 siliceous zone fingers out at depth
 into "chert"
 (sulfaceous exhalites)

RIGHT 14

10050N altered basalt below and in system
 Both massive sulphide and magnetite lodes
 Down the section give way to "cherts"

RIGHT 15

9900N Basal magnetite lode
 massive sulphide
 altered basalt laterally

GEOCHEMISTRY

Major elements (minor element results not back yet - will present them in Victoria)

SLIDE

RIGHT 16 AFM Plot - Tholeiitic Suite *COLOR SCHEME*

RIGHT 17 SiO_2 NOTE Blank areas are FENNEL FROM AREA TO THE SOUTH)

RED Altered basalts - slightly depleted
Siliceous rocks show wide range in SiO_2 content

RIGHT 18 Al_2O_3 altered basalts - little change

RIGHT 19 Fe_2O_3 (Total Iron) altered basalts v. slightly depleted
siliceous rocks - some NIL
- some pyritic

RIGHT 20 CaO altered basalts depleted
siliceous rocks very low

RIGHT 21 Na_2O Scatter is wide but some altered basalts strongly depleted
siliceous rocks - NIL -

RIGHT 22 K_2O altered basalts have more K_2O generally ^{then "fresh"}
siliceous rocks - K_2O quite variable

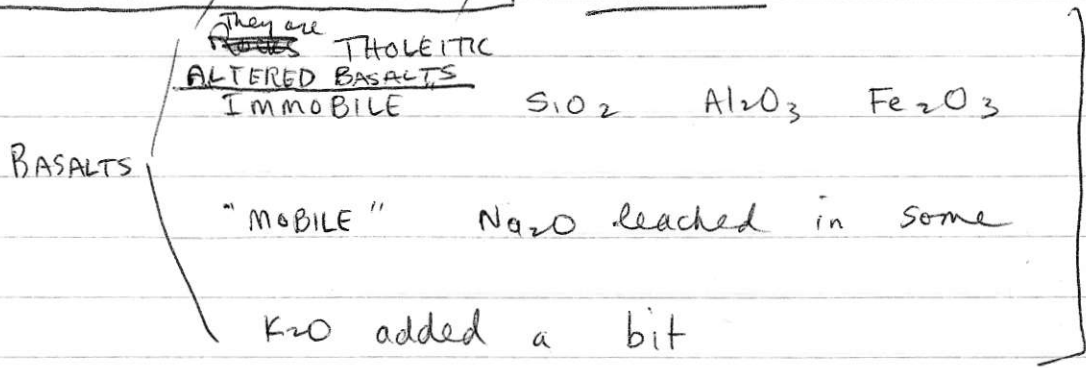
RIGHT 23 Volcanic Classification (after Church)

Basicity Index
Total Iron $\left(\frac{1}{2}(\text{CaO} + \text{MgO})\right)$

Basalts + alt basalts sl. alkali deficient
siliceous rocks - not in rhyolite field at all.

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Geochemistry - summary - BASALTS



MATORS =
 NO REALLY
 GOOD
 INDICATION
 THAT THE ORE
IS THERE

SILICEOUS ZONE Exhalite or very silicified, leached volcanic

CONCLUSION

RIGHT 24

- Mineralization ^{is proximal and occurs} in stratabound zones

associated with siliceous tuffaceous exhalites

- Over and underlain by tholeitic basalts (often pillowed)

- Break in sedimentation a few hundred meters up section

- Comparison with Besshi (from Andri) is striking
 VOLCANOGENIC \downarrow DEPOSIT STATE OF
 CUPRIFEROUS PYRITE

BESSHI OR CYPRUS TYPE

Close More deposits ^{of this type} should be present in the Fennel Rocks to the North.