

TYPE SECTION - KUTCHO CREEK

Kutchok Creek

- KC-1 Trondjehmite (K-76-1) 884672
104 I/2E
104 I 006
052
- KC-2 Lt. green siliceous rhyolite (K-76-2)
- KC-3 Alt'd Qtz eye schistose rhyolite (K-76-3) [dyke]
- KC-4 Dk. green basic chlorite schist (K-76-4)
- KC-5 Lt. cream^{foliated} rhyolite (dyke) (K-76-5)
- KC-6 Lt. grey-green foliated rhyolite (dyke) (K-76-6)
- KC-7 Chlorite-feldspar rich (schist) grit (K-76-7)
- KC-8 Chert (K-76-9)
- KC-9 Fsp.-grit (K-76-10)
- KC-10 Qtz-sericite schist with large prite cubes (K-7)
- KC-11 Qtz + dol. + sericite + (py-cpy) (K-14)
- KC-12 Min. Qtz-sericite schist (K-2)
- KC-13 Talc-sericite-Qtz schist (K-76-12)
- KC-14 Massive py + Qtz (K-16)
- KC-15 Cpy-rich + py + Qtz (vuggy) (K-3)

KUTCHO CK. Sept. 2/03
chat with Dave Canfield
re- NW MA '03 talks
- "Kutchok Ch." by Peter Holbet
[acquired by McJones et al.?
- company?]

KC-16 Massive cpy + minor ZnS + PbS ORF!
(Imperial boulder)

KC-17 Grit with qtz (blue) eyes (K-12)

KC-18 ~~#bto~~ Hornblende-sill (K-7) (Meta-gabbro)

KC-19 Green crystal tuff with large qtz xls (K-8)

Argillite

Limestone

Deposits Near Kutcho Creek, Northwestern British Columbia.

A. PANTELEYEV and D.E. PEARSON, British Columbia Department of Mines & Petroleum Resources, Victoria, B.C.

KUTCHO CK.

CIM

Sept. 76

p. 64

Pyritic quartz-sericite schists approximately 100 kilometres east-southeast of the community of Dease Lake were found in 1972 to contain copper and zinc minerals and have since been extensively explored. The mineralized rocks occur in the Cassiar Mountains of northwestern British Columbia between Kutcho Creek on the west and Tucho River on the east. Pyritic beds have been traced for approximately 13 km along strike. A main zone of interest occurs at the western end of the pyritic zone, where disseminations and small lenses of other sulphide minerals are abundant over a distance of approximately 2 km. Strata favourable for this type of deposit are now known to extend to the west of Kutcho Creek.

The geological setting, stratigraphy, structural style and lithology of an approximate 3000-metre bedded succession that encloses the sulphide-bearing beds can be summarized as follows. The sequence is thought to be Paleozoic in age and consist of an underlying sodic volcanic unit, an intervening coarse-grained epiclastic or clastic unit containing quartz-bearing grits, and an overlying fine-grained clastic unit of thinly bedded siltstone and shale. The rocks are folded isoclinally, metamorphosed and have a well-developed axial planar foliation. The amount of volcanic component decreases upward in the bedded sequence. The mineralized horizon is in fine-grained sedimentary rocks enclosed in grits near the transition from mixed volcanic and sedimentary rocks to purely detrital sedimentary rocks of the middle map unit. The sulphide-bearing unit consists of siliceous and dolomitic pelitic members that have been metamorphosed to a lustrous siliceous mica schist.

The deposit formed in a predominantly sedimentary environment in a period of quiescence during generally coarse clastic sedimentation into the basin. There is no obvious association with volcanism, although the deposit is possibly a distal volcanic exhalative product. A comparison may be drawn with the bedded cupriferous iron sulphide deposits (Besshi-type deposits) of Japan.

Paper No. 7-5 —

The Volcanogenic Massive Sulphide Potential of the Western Cordilleras:

C.J. SULLIVAN, Consulting Geologist, Toronto, Ont.

The volcanogenic massive sulphide potential of the Western Cordilleras is very large, but it has been partly neglected because of the emphasis on porphyries — which were themselves formerly neglected; also, massive sulphide buffs have been enamoured of the Precambrian Shield.

To realize this potential, geologists should be more conscious of the environments of massive sulphide ores, including the basic Sanbagawa environment, as well as the acid volcanic association.

Government geologists and all concerned need to note the importance of, inter alia, acid fragmentals, explosion breccias, bird's-eye quartz porphyry, volcanic sedimentary transition zones, rusty formations and nearby basic plugs.

A greater use of airborne and ground electromagnetic and magnetic systems is recommended. Geochemistry and float tracing are effective, though care must be taken not to neglect anomalies which look weak by porphyry copper standards.

In addition to copper, lead and zinc, the author believes that there is an immense silver (and, to a lesser extent, gold) potential in the volcanic belts of the west.

SESSION 8 — Metal Mining Division — Underground Mining

Hyatt Regency Hotel

A. PETRINA, Session Coordinator

Paper No. 8-1 —

Hecla — Seismic Detection and Rockbursts.

J.T. LANGSTAFF, Hecla Mining Company.

Rockbursting is a problem of considerable magnitude in the deep mines of the Coeur d'Alene district in northern Idaho.

Recent research efforts directed by the Denver Research Center of the U.S. Bureau of Mines indicated that a recognizable pattern of seismic activity preceded some bursts and that present off-the-shelf seismic detection equipment was available that would operate satisfactorily in an underground environment.

Using this information, Hecla Mining Company has installed seismic monitoring systems in both of its district mines, the Star and Lucky Friday. Each monitoring system consists of a network of geophones with attendant amplifiers that are connected by wire to a central computer. The origin of each seismic event is determined by the computer and a three-dimensional location is printed out. This information is plotted on a daily basis and is used as an aid in routine mine planning.

This paper will review the background of rockbursting in this district, including its causes and effects. It will outline the equipment and operation of the microseismic systems at the Star and Lucky Friday mines and will examine the results so far obtained.

Destressing techniques and other preventive measures will also be discussed.

Schuster

SEVENTH GEOSCIENCE FORUM
WHITEHORSE YUKON
DECEMBER 2-4, 1979

NOV 02 1979
S. C. B. C.

Registration: Lobby of Travelodge
Dec. 1: 4:00-6:00 PM
Dec. 2: 8:00-9:00 AM
6:00-7:00 PM

All sessions to be held in Bonanza Room
Whitehorse Travelodge

SUNDAY Dec. 2

8:30-12:00 SESSION I - Regional Geology

Chairman - R.A. Granger (Yukon Chamber of Mines, Whitehorse)

8:30 AM - D.M. Watson (DIAND, Whitehorse) - Welcoming Speech

8:35 AM - D. Tempelman-Kluit (GSC, Vancouver) - Geology of the Whitehorse Trough Reassessed

✓ 9:00 AM - D.S. Jennings and G.A. Jilson (Cyprus Anvil, Vancouver) - Geology of the Anvil Range - Its Stratigraphy, Tectonics and Depositional Setting

9:35 AM - G.A. Jilson, D.S. Jennings & L.C. Pigage (Cyprus Anvil, Vancouver) - The Finlayson Lake Tectonic Zone - A Reconnaissance

10:00 AM *** COFFEE ***

10:30 AM - S.P. Gordey (GSC, Vancouver) - Structure and Stratigraphy of the Nahanni Area, Yukon-N.W.T.

11:00 AM - F. Weber (USGS, Fairbanks) - Geology of the Yukon-Tanana Upland, Alaska

11:30 AM - W. Gilbert (ADGGS, Fairbanks) - Problems in Paleozoic Correlation in Central and Western Alaska

12:00-1:30 *** LUNCH ***

1:30-5:15 SESSION II - Massive Sulphides

Chairman - E.J. Debicki (Canadian Nickel Co. Ltd., Whitehorse)

✓ 1:30 PM - S.D. Scott (U. of Toronto) - Structural Control of Kuroko Type Massive Sulphide Deposits in Japan and Canada

✓ 2:20 PM - T.E. Smith (U. of Alaska, Fairbanks), D.A. Heatwole and J.M. Proffett (The Anaconda Company, Anchorage) - Ambler Schist Belt, Northwest Alaska: Host Terrane for Volcanogenic Base Metal Massive Sulphide Deposits of Mid-Paleozoic Age

3:05 PM *** COFFEE ***

3:20 PM - R.A.A. - Delta Deposit

3:55 PM - G. Kent - Duo Lake Deposit

4:15 PM - J. Morin (DIAND, Whitehorse) - Mississippian Vulcanism and Associated Pb-Zn-Ag-Barite Mineralization, Pelly Mountains, Yukon

4:45 PM - M. Marchand (DIAND, Whitehorse) - Stratiform Zinc Mineralization on the North Flanks of the Pelly Mountains, Yukon

6:30-7:30 PM: RECEPTION: Bonanza Room
HOST: Arctic Diamond Drilling Limited and
E. Caron Diamond Drilling Limited

bonanza room
reception
Toway

Lened

Geochron

- panning techniques
- not ppm - count Scheelite grams

4:42 PM - M. Marchand (U. of Toronto) - stratiform Zn mineralization on the north side of the Belly Mountains, Yukon

4:12 PM - J. Morton (DIAND, Whitehorse) - Mississippi and associated Pb-Zn-Ag-barite mineralization, Belly Mountains, Yukon

3:22 PM - E. Kent - Dno Lake deposit

3:20 PM - R.A.A. - Dista deposit

3:20 PM *** COFFEE ***

deposits of mid-Paleozoic Age

Alaska: Host Terrane for Archeanogenic base metal massive sulfide (The Anacosta Company, Anchorage) - Under schist belt, northwest

5:50 PM - T.E. Smith (U. of Alaska, Fairbanks), A.D. Heath, A.D. & M. Morton - massive sulfide deposits in Japan and Canada

1:30 PM - S.D. Scott (U. of Toronto) - structural control of Kuroko type

Chairman - E.G. Depicki (Canadian Nickel Co. Ltd., Whitehorse)

1:30-2:12 SESSION II - Massive sulfides

12:00-1:30 *** LUNCH ***

KUTCHO

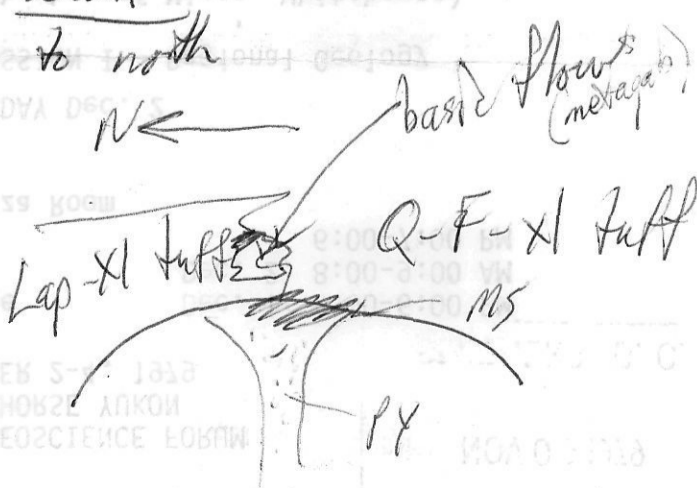
Upper
Triassic
age

3 1/2 km length now
MS 45° to N

- Apparent dome in rhy tuff
- min. near top
- dissem py below MS dome (pipe? - stringer ore?) - footwall
- derived from vent to south
- facies change to north

Kutcho Zone (Sumac)
Esso (2 zones)
Sumac West zone (less grade mainly py)

Bornite (+chalcocite)
2/3 total Cu content



Hematite common in tuffs (eg. 5 to 1%) esp QFCT unit

- no apparent intro of silica
- wedging of ddk worked well + mini-cave drilling

Mar. 15/82

Katcho. Cr.

- Sumac - Taiju Ueno
- Makoto Obara

100 tons sample - ad. 7 200 metres

winter road? ↓ end of March.

Dease Lake → Airstrip

temp road - Airstrip to mine site May - June

① Adit. in July.

② Terrain studies

③ Groundwater - dewatering studies. mid July

④ Pilot/metallurgical test. → Aug

↓ \$1/2 million plus met. test.

↓ feasibility study

Reserves
Sumac 11.7 million 1.51 cu. 2.262m 0.79 Atg

ESSO 6 million. 2.28 . 4.32m
Sumac

122 holes - 22500 metres py cpy born. sph

KUTCHO

Textur Pyrite dx. - hydrothermal
but mainly stratoband

- hessite - silver telluride

Cu-Zn 0.5:1 to 0.8:1

Fe-olominites

AGM - CIM (Van.)

Apr. '85

Peter Halbeck



MEMORANDUM

TO:

Vic Preto
Manager,
Victoria

FROM:

Tom Schroeter
Senior Regional Geologist
Vancouver

SUBJECT:

Kutchok Creek Project - Stage II

DATE:

July 7/86

FILE:

For Your Information

Please O.K. and Return

Please Discuss With Me

Per Your Request

For Your Signature

Please Process

Return With More Details

Investigate and Report

Please Answer

For Your File

Everything looks fine.

1) Road Corridor: agree with route selection - will open up good prospecting territory.

2) Potential for discovery of mineral deposits of various types and industrial minerals (i.e. jade) considered excellent in this area. Also placer gold.

Tom

REPLY:

KUTCHO CREEK - Peter Holtek

- 20 yrs. ago - initial disc. / Stg. Cu-Zn
- rhyolite dome 3 lenses
- Zn-top / Cu-lower
- dol-br = dolomite 'exhalites'!
(cf. silica exhalites)
- = metallurgical problems - v. fr. gr. sul.
- Ag-tellurides!! (new)
- Sato's model = excellent.
- no bar. or Pb
- green mica (musc.) - good expl'n dth' indic.

- build on excellent geol. data base
eg. + Gabrielle + Sumitomo - 1986 (PH) - Kutchu.
Esso - 1986 (PH) - Kutchu.
- environmental - AMD
- ~~'inboard, E. T.M.' - VMS~~
- ~~rhyolite dome 'expanded' (PW)~~
- 40 km strike length! of horizon.
(Good regional pot!)
- model / geol. - there!!
- 60 km of core.
- success of 'vectoring in'
(esp. geochem + alt. patterns)

MEG TALK - PETER HOLBECK

DEC 12/90

KUTCHO CREEK MASSIVE SULPHIDE DEPOSIT

- initial discovery in 1970
- currently in STAGE II APPROVAL
- HOMESTAKE, SUMITOMO, AMERICAN RESERVE are involved
- reserves \approx 40 million tons in 3 massive sulphide lenses. Open Pit 'mineable' reserves are:

KUTCHO ZONE - 14 mt @ 1.75% Cu
2.47% Zn
30g/t Ag
 $\frac{1}{3}$ g/t Au

SUMAC WEST ZONE - 5 mt @ 1.1% Cu
1.6% Zn

ESSO WEST ZONE - 1.5 - 3 mt @ 3.5% Cu
5.5% Zn
2g/t Ag
0.6g/t Au

- Kutcho lense: base of massive laminated PY
 - overlain by Cu-rich layers grading upward to Zn-rich layers.
 - sequence is capped by silica exhalites & whole sequence is repeated several times
 - local sulphide breccias

- massive sulphide lense is capped by a thinly layered dolomite / bornite "carbonate exhalative".
- NO barite or galena
- lenses are hosted in Kutcho Fm. - rhyolite / basalt island arc assemblage that make up part of the King Salmon Allochthon
- geol base map of Gabrielse = excellent
- Sato's VMS model fit Kutcho dep. very well
- green mica (fluoromuscovite) is a good exploration / alteration indicator. Also trends in alt. geochem.
- Ag - tellurides common!
- very fine-grained sulphides → metallurgical problems
- Gold increases with copper
- 60 km of core
- drilling expanded FW rhyolite dome's size
- about 40 km of strike length to Kutcho horizon
- excellent exploration target / potential!

Notes

R. Lane / T. Schroeter

MFB

Dec. 12/90

→ Kutcho Ck

(No/bek)

"

Ag-Tellurides

"

