

6051

CANADIAN SUPERIOR EXPLORATION LIMITED

REPORT ON GEOLOGICAL MAPPING

on the

COPPER CLIFF PROSPECT

LOCATION: 10 miles West of Lardeau, B.C.
Lat. $50^{\circ}10'$ N; Long. $117^{\circ}10'$ W
N.T.S. 82K/3E

CLAIM NAMES:

Reverted Crown Grants
Perth L8793 and Pyrite L8794
New Claim Record Nos.
18104 Oct. and 18105 Oct.

WORK PERIOD:

August 26 - September 1, 1976

MINERAL RESOURCES BRANCH ASSESSMENT REPORT No. <u>6051</u>
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D.R. Rae, B.Sc., M.Sc.
Vancouver, B.C.
October 28, 1976

CANADIAN SUPERIOR EXPLORATION LIMITED

SUITE 2201-1177 WEST HASTINGS STREET

VANCOUVER, BRITISH COLUMBIA V6E 2K3

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REGISTERED

January 13, 1977

Mr. E.J. Bowles
Chief Gold Commissioner
Department of Mines and Petroleum Resources
Parliament Buildings
VICTORIA, B.C.
V8V 1X4

Dear Sir:

Re: Perth, Pyrite Mineral Claims; geological
report #6051; file 166-Slocan

Please find enclosed the two copies of the report with the needed amendments. We regret any inconvenience this may have caused you.

Yours truly,


J.J. Morrow.)

JJM:n1
Encl.

INTRODUCTION

The Copper Cliff property is a volcanogenic massive sulphide prospect held by Canadian Superior Exploration under option from Otaker Janout. Two men spent 7 days geologically mapping and prospecting the property.

SUMMARY

Rocks of the Kaslo group, a volcano-sedimentary unit of Permian and/or Triassic age host the showings.

The period August 26 - September 1, 1976 was spent mapping and prospecting the property to assess its potential as a massive sulphide prospect.

Four laterally restricted occurrences of massive sulphides were noted within a lens-shaped felsic volcanic-metasedimentary break between two andesite flow sequences.

Massive sulphides are predominantly pyrrhotite with lesser but variable amounts of chalcopyrite, sphalerite, pyrite and galena. Grades in general are low but highly variable such that individual hand specimens up to an estimated 3% Cu and 3 - 5% Zn were observed.

CONCLUSIONS AND RECOMMENDATIONS

Surface dimensions and tenor of showings are restricted but indicate a geologic target favorable for the development of a massive sulphide deposit.

The host horizon is open to the northwest and should be further prospected and mapped where topography permits using large scale air photos. In prospecting, emphasis should be placed on searching for rhyolite breccia as well as mineralization.

Diamond drilling is recommended.

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FIGURE 1 - LOCATION MAP

FIGURE 2 - GEOLOGY MAP

(IN POCKET)

Map #1

PHYSIOGRAPHY AND ACCESS

The property lies within the Selkirk Mountain Range on the southern slopes of Mount Cooper, 10 miles west of Lardeau, B.C. The showings are situated at about the 4700' contour along a southeasterly flowing tributary to the main branch of Cooper Creek.

Cliff faces along this tributary made grid mapping impossible in areas and induced undoubted measurement inaccuracies where attempted.

Access is by helicopter.

HISTORY

Reference to work done on the claims dates back to 1907,⁽¹⁾ when 6 men spent approximately 5 months in development work. Two adits, the upper 14 feet long and the lower 90 feet in length evidence these efforts.

In October 1974 Otaker Janout of White Rock, B.C. acquired the claims and his son has prospected the claims periodically since that time.

There is no record or evidence of diamond drilling on the property.

CLAIM STATUS

Otaker Janout obtained the claims in October 1974 as the Perth and Pyrite Crown granted claims lapsed because of taxes owing. They presently hold the status of ordinary mineral claims and are grouped under the name Copper King.

(1) B.C.D.M. Report, 1907; p. 96
G.S.C. Summary Report, 1908; pp. 86-87

As per a letter of intent with Mr. Janout, Canadian Superior staked the PIPE 1-4 claims to protect the area about the Copper King group. The PIPE claims, consisting of 12 units each, were recorded on October 13, 1976 and are shown on the location map (Figure 1).

REGIONAL GEOLOGY

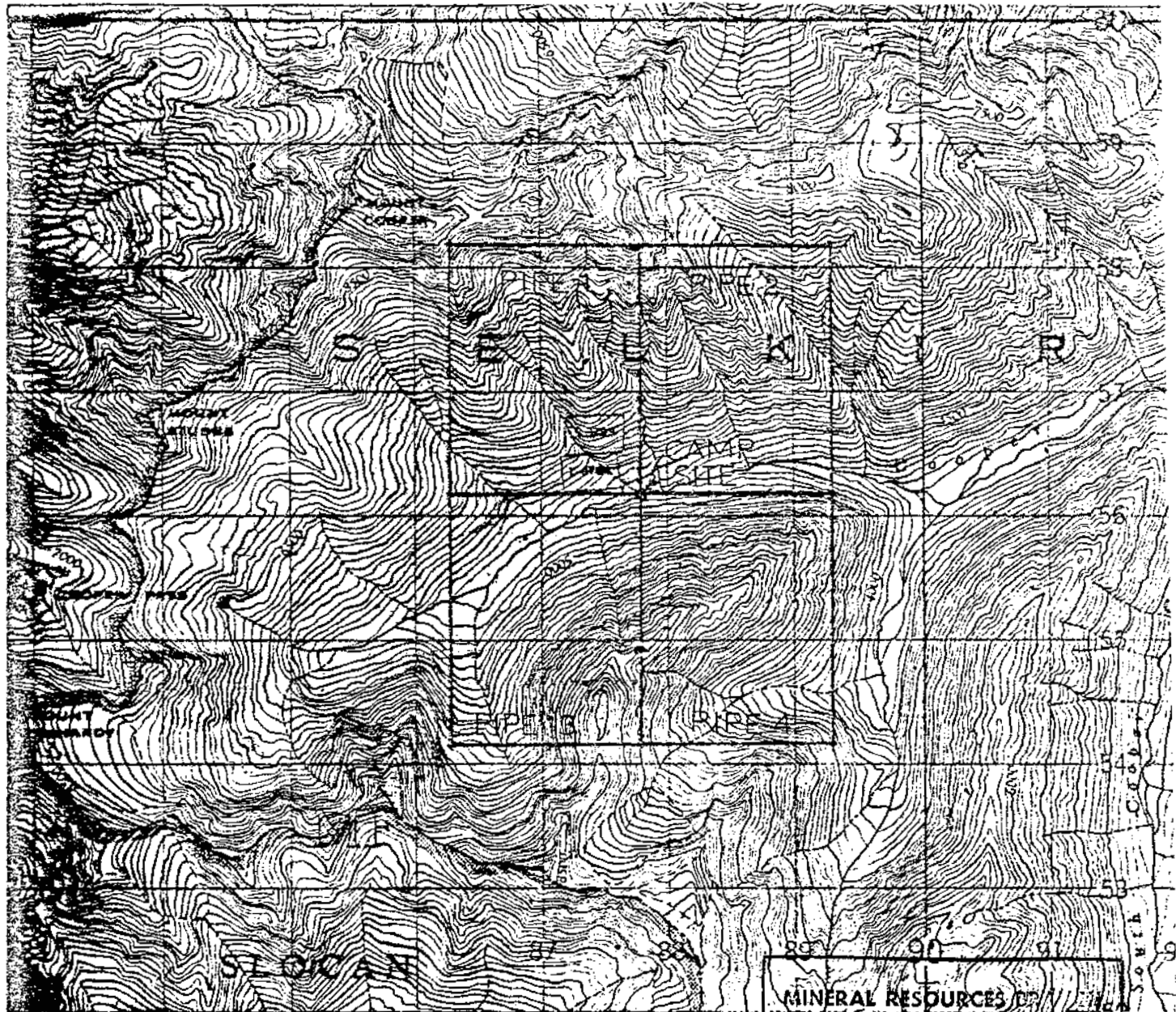
The property is located within the northwest striking Kalso Group of volcanics and sediments determined by the G.S.C. to be Permian and/or Triassic in age. On a regional scale the group has been anticlinally folded and later intruded by a Jurassic leuco quartz monzonite batholith and its satellite stocks.

Windows of the older Milford and the younger Slocan Groups appear with the Kalso group suggesting the latter has been complexly folded.

The main mass of the Kalso Group in which the area of interest is contained is situated southeast of the Kuskanax Batholith. In this area the broad anticlinal structure plunges moderately to the southeast.

PROPERTY GEOLOGY

A detailed look at the showings and neighbouring geology was necessary to establish the environment in which the showings are situated. The 1" = 1 mile air photos available were of no value to this end. Consequently flagged chain and compass grid lines were established at attitudes permitted by the topography. These grid lines are shown on the accompanying geology map (Figure 2). This mapping method severely restricted both the amount and aerial position of the area that could be mapped and the absence of tie-lines induces obvious positioning inaccuracies to which the reader's attention is drawn. Use of enlarged orthophoto maps is suggested.



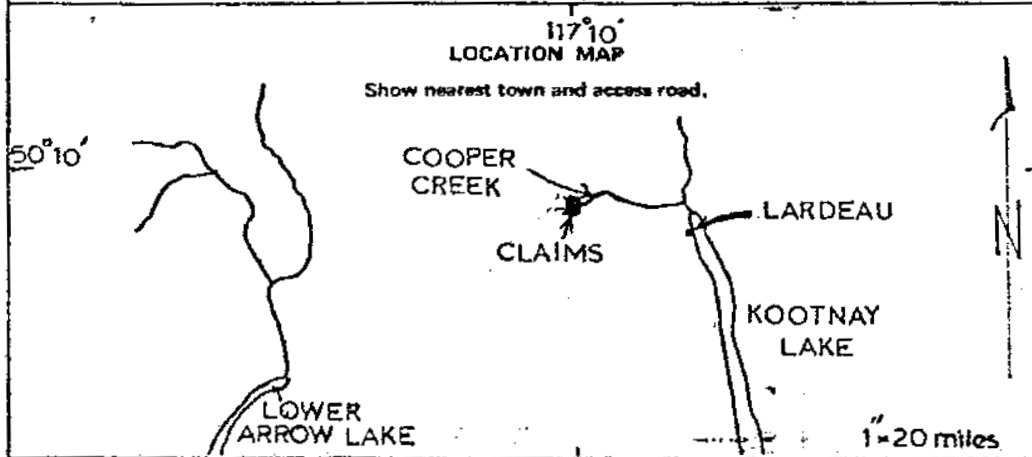
INDICATE:

Claim boundaries, permanent watercourses, access road and distance to nearest town, proposed roads, test pits, trenches, ground slope at trenches, drill sites, and camp sites.

MINERAL RESOURCES DIVISION

ASSESSMENT REPORT

No. 6051



CROWN GRANTS
8793 & 8794
Name of property COOPER CLIFF
Claim No. 18105 & 18104
Owner OTAKER JANOUT
Date SEPT. 30, 1976
File No. _____

FIGURE 1

As shown in Figure 2, massive pyrrhotite mineralization is stratabound by a near vertical sedimentary-acid volcanic lens within Kalso volcanics. A metasedimentary unit of interbedded siliceous argillite and quartzite northeast of the andesites is similar to that described by the G.S.C. as a unit of the younger Slocan Group. Portions of Kuskanax stocks border the mapped area to the east and west. Dikes and sills of Kuskanax affiliation intrude the volcanics and sedimentary units.

LITHOLOGY

The Kaslo Group, as observed within the area mapped, has been subdivided into two distinct andesite flow units separated by a sedimentary-felsic volcanic formation. Type I andesite defines the western side to the group and is composed of fine to medium-grained green and white andesite flows of from 1' - 30' thick, separated by 6" - 5' pale green laminated dacite, chert and fine-grained metasediments. The proportion of interflow sediments to flow volcanics increases to the east. Type II andesite situated to the west is coarser in grain size (medium to coarse-grained), massive and was not observed to contain interflow sediments. A larger proportion of the mafics within this unit is amphibole perhaps reflecting its proximity to the stock mapped further to the east. Divisions within the sedimentary-felsic volcanic formation have not been mapped. Rock types noted include: laminated cherts, cherty argillites and fine-grained tuffs; narrow very fine-grained massive rhyolite flows (rare quartz eyes seen); pale green-yellow laminated pyritic chert or tuff?; rhyolite breccia probably better termed an agglomerate; and massive sulphide lenses containing generally less than 30% siliceous fragments. Sediments dominate the horizon volumetrically.

West of Type I andesites a metasedimentary unit of fine to very fine-grained grey to black siliceous argillite interbedded with quartzite appears similar to a unit assigned to the Slocan Group by the G.S.C. Individual beds are generally less than 6" thus imparting a ribboned appearance to many exposures.

Intrusives shown at the west and eastern margins of the mapped area in Figure 2 are representative of stocks of Kuskanax type. Quartz monzonite in composition, they contain 10 - 25% mg quartz, generally larger crystals of plagioclase, locally porphyritic and a very low mafic content.

Felsite dikes and sills are fine-grained compositional equivalents to the intrusive above.

STRUCTURE

Formations strike northwesterly and dip steeply to the east or west. Tops could not be determined from graded bedding or the presence of a pipe. If the interbedded argillite and quartzite unit west of the andesites is part of the younger Slocan series tops would then be to the west. However, pyrrhotite-chalcopyrite mineralization in the upper adit grades into massive mineralization from west to east with a sharp eastern contact suggesting tops are to the east.

ALTERATION

Volcanic flows have been altered from green schist to amphibolite facies. Chlorite and stringer sulphide 'pipe' alteration was looked for but not found.

Hydrothermal alteration effects by the intrusives is minimal.

MINERALIZATION

Four areas of mineralization are shown in Figure 2. In all of these pyrrhotite is by far the dominant sulphide. Subordinate amounts of chalcopyrite, sphalerite, pyrite and minor galena locally produce ore grade hand specimens but it is doubtful a bulk sample of all the sulphides observed would run in excess of 1% combined Cu-Zn.

The two southernmost showings at present are less than 1' wide and neither is traceable over more than a few feet. The most southerly of these appears to have been exhausted by a 12' long trench outside which abundant specimens rich in Cu and Zn are present.

Within the upper adit the thickest concentration of sulphides are found. From the back of the adit 6' of low grade pyrrhotite-pyrite-chalcopyrite-sphalerite mineralization within cherty argillite quickly grades into a 6' lens of essentially massive pyrrhotite. This lens is separated from another 2' wide sulphide lens by a bed of cherty argillite. The sulphides pinch out sharply over a 20' strike length to a 6" - 1' thick sulphide horizon which strikes up the hill for over 100' (as shown in Figure 2).

At the showing in the creek two 2' beds of massive pyrrhotite-pyrite (2-3% chalcopyrite) are separated by 1 1/2' of chert. The showing is visible over 15' of strike length but disappears under stream debris at either end. Examination of outcrop further along strike limits its maximum dimension to about 50'.

ECONOMIC GEOLOGY

The showings located to date are small in size and on average low in grade. However, their position within a pause in andesite flow activity represents a classic volcanogenic-massive sulphide environment and as such should be actively pursued.

REFERENCES

- G.S.C., Summary Report, 1908; pp. 86-87.
- B.C.D.M. Report, 1907; p. 153.
- G.S.C., Memoir 161; 1929.
- G.S.C. Geology Map O.F. 288 (Wheeler and Reid).

A P P E N D I X I

COST STATEMENT

In support of an Affidavit on Application to Record Work on the Copper King Group of claims, Slocan Mining Division.

Costs incurred in support of geological mapping from August 26 to September 1, 1976 are as follows:

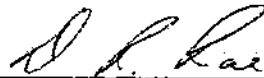
1. Helicopter (Camp in)	\$ 601.24	
(Camp out)	<u>534.88</u>	\$1,136.12
2. Food		110.90
3. Geological Mapping		
D. Rae - 7 days @ \$60.00/day	\$ 420.00	
J. Hemelspeck - 7 days @ \$55.00/day	<u>385.00</u>	805.00
4. Report Preparation		
D. Rae - 2 days @ \$60.00/day		<u>120.00</u>
	TOTAL	<u>\$2,172.02</u>

A P P E N D I X II

CERTIFICATE

I, Donald R. Rae, of Vancouver, in the Province of British Columbia do hereby certify that:

1. I am a geologist residing at 1003 - 1933 Robson Street, Vancouver, British Columbia.
2. I am a graduate of the University of Toronto, Toronto, with a degree of B.Sc. (Hons.) (1970), and a degree of M.Sc. (1975) in Geology.
3. I have been practising my profession for four years.



D.R. Rae, B.Sc., M.Sc.

Vancouver, B.C.
October 28, 1976

PERTH
L8793

PYRITE
L8794

Claim Boundary

Steep Slope
Heavily Treed

Rhyolite
Breccia Prods
up to 30' long

Base Line

20 Falls

10 Falls

15 Falls

SNOW
COVER

- LEGEND
- 1 LEUCO QUARTZ MONZONITE: mg, 10-25% quartz, locally porphyritic plagioclase, 5% mafics as biotite replaced pyroxene? and mafic clots; traces hematite, pyrite; locally garnetiferous near contacts
 - 2 FELSITE f-vfg dikes and sills similar in composition to leuco quartz monzonite
 - 3 METASEDIMENTS interbedded grey to black argillite and quartzite
 - 4 ANDESITE - TYPE I - f-mg andesite; 40-60% chlorite with 6"-2" interbeds pale green metadiolite - metasilstone; minor Py
 - 5 FELSIC SERIES - undifferentiated - well bedded reddish black cherry argillite, white to yellow green pyritic rhyolite, tuff; possible thin rhyolite flows; local occurrence of rhyolite breccia (see maps); patchy massive sulfides Po-Py-Cp-Sphal. 6"-6' thick
 - 6 ANDESITE - TYPE II - m-cg andesite; 40-60% chlorite; 1-2% disseminated Py; no interbeds observed.
- CLIFF FACE (down direction on spiked side)
- STREAM AND FLOW DIRECTION
- MINERALIZATION
- ADIT
- OUTCROP
- GEOLOGICAL CONTACT
- ASSUMED GEOLOGICAL CONTACT

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
No. **6051**
MAP NO. **#1**

CANADIAN SUPERIOR EXPLORATION LIMITED

COPPER CLIFF PROSPECT

GEOLOGY MAP

FIG. 2

DWG.

SCALE 1"=100'

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