

Origin of  
Highland Valley Ore Deposits  
**INTER-OFFICE CORRESPONDENCE**

826930

92 I.

FROM.....  
TO File.....  
DATE April 14th, 1959.....  
SUBJECT origin Highland Valley ore deposits- Theory;



**MESSAGE**

(TO BE COMPLETED IN TRIPLICATE)

A		N
✓	W.S.R.	✓
	G.A.C.	
✓	E.O.C.	✓
	H.A.P.	
	R.D.S.	
	B.C.B.	
	G.P.R.	
	E.L.D.	
	J.L.B.	
	E.C.J.	

Reminder file:

C. Mike Carr, Geologist Dept Mines B.C., at an MEG meeting proposed a theory of deposition of copper ores in Highland Valley, in the Jersey Zone of Bethlehem Copper Copp, based on a summer study of the mineral and rocks on the Jersey, White, East Jersey zones of Bethlehem and on similiar, tho less detailed work, on the Bethsaida, Krain, and Trojan mineral occurrences.

Carr is PHD Oxford University, English; experience is mainly in igneous rocks, has taught briefly at University of B.C. and Illinois.

The theory of deposition and association of copper minerals has been developed by Carr, within the past month, following study if his own field work, and information on drill cores and underground mapping of the currently-being -driven 4600 level tunnel, by Jack Gower, of Northwestern Explorations Ltd.

The theory is advanced as a guide in the search of the Guichon batholith for other types and locations of mineralized bodies. Carr, with Gower, believes that further field work will confirm the theory. It is planned to publish a map outlining the work to date to be distributed on a restricted basis. A memoir will ultimately be published. *Map release expected in 6 weeks.*

The theory:

*occurring* There are three types of porphyry dyke -like masses *outcropping*, having a north-strike on Bethlehem that are significant. Type P-1 is quartz-poor and is most abundant and is not connected with mineralization Type P-2 is rare and it's significance is not thoroughly known.

Type P-3 is an aplite, extremely white in outcrops, (fresh) and is the source of mineralization.

These dykes rarely outcrop on surface at Bethlehem, are mapped mainly from drill core logs and the walls of the 4600 level tunnel. Strike is north dip steep west. They intersect and are lost in the explosion-breccia masses that form the mineral bodies. They contribute n.e striking sills, dip 45 deg n.w. (in some cases dips. s.e.) These sills are the common exposures of the dyke material at the present level of surface erosion.

The dyke root is the source of the minerals, copper and molyb. The orebodies are enclosed within the boundaries of adjacent opposite-dipping sills. Better grade ore is found at the centre- of an egg cup -shaped mass, bounded by the sill bodies of porphyry of P-3 type. The sketch below is a typical section thry the 4600 adit tunnel.

**INSTRUCTIONS FOR USE OF THIS FORM**

Form to be completed in triplicate by originator. Two copies - No. 1 and No. 2 - to be forwarded to addressee. Copy No. 3 to be retained in originator's file until reply received. Addressee to complete reply in duplicate on reverse side of sheets 1 and 2 and return No. 1 to originator. In following this procedure both parties have the complete message and reply on one sheet of paper.

# INTER-OFFICE CORRESPONDENCE

FROM .....

DATE .....

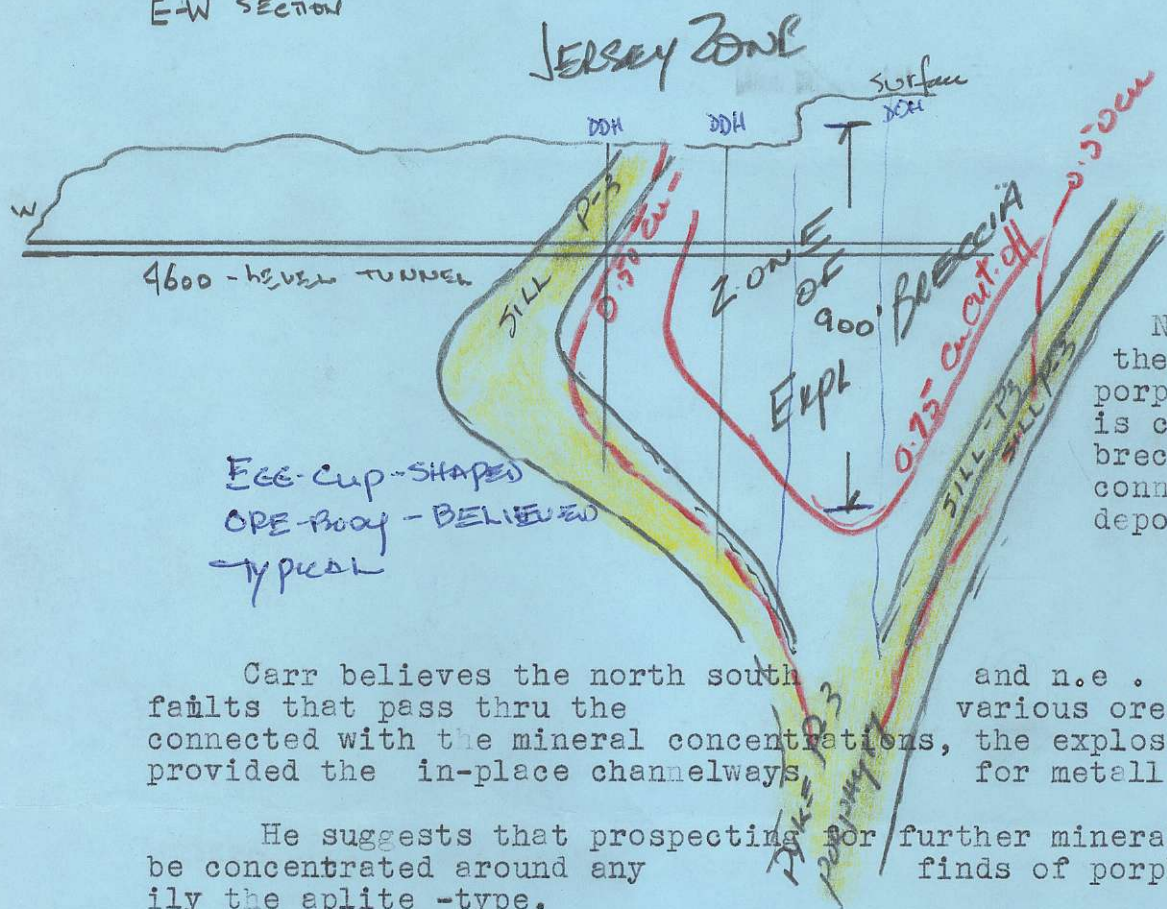
TO .....

SUBJECT .....

## MESSAGE

(TO BE COMPLETED IN TRIPLICATE)

E-W SECTION



400 scale  
CARR Pm  
map-copy  
April 189

Note: Carr states there is a fourth porphyry dyke; which he is certain is post-breccia and is not connected with mineral deposition

Carr believes the north south faults that pass thru the connected with the mineral concentrations, the explosion breccias provided the in-place channelways, and n.e. striking various ore zones are for metallic deposition.

He suggests that prospecting for further mineral zones should be concentrated around any finds of porphyries, particularly the apelite-type.

Most recent figures on the ore-picture at Bethlehem are:

East Jersey Zone:	9 million tons	of 0.75% Cu
Jersey "	35 million tons	of 0.65% Cu
Iona "	24 million tons	of 0.75% Cu.

The work at present is being concentrated on the Jersey Zone.

The Krain and Bethesda have been tested and dropped as options by Kennecott subsidiary. Trojan has been optioned by Newmont but little work beyond dewatering the shaft and some underground mapping has been done to date.

### Opinion:

If Carr's theory is correct, 1) tonnages in the three Bethlehem zones are probably not likely to be increased. This would be a critical factor for the property since the mine-making possibilities are based on finding sufficient tonnages of better than 0.75% Cu.

2) Any Future prospecting should be done by experienced geologists

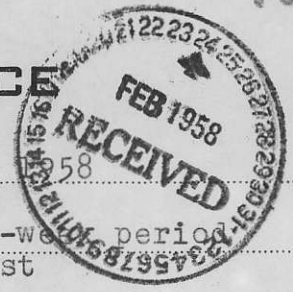
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# INTER-OFFICE CORRESPONDENCE



FROM Rod Macrae

DATE Feb 21st, 1958

TO E.).Chisholm

SUBJECT report 2-week period ending Feb 21st

### MESSAGE

(TO BE COMPLETED IN TRIPLICATE)

A		N
<input checked="" type="checkbox"/>	W.S.R.	<input checked="" type="checkbox"/>
<input type="checkbox"/>	R.J.B.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	E.O.C.	<input checked="" type="checkbox"/>
<input type="checkbox"/>	H.A.P.	<input type="checkbox"/>
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<input type="checkbox"/>	B.C.B.	<input type="checkbox"/>
<input type="checkbox"/>	G.P.R.	<input type="checkbox"/>
<input type="checkbox"/>	E.L.D.	<input type="checkbox"/>
<input type="checkbox"/>	J.I.K.	<input type="checkbox"/>
<input type="checkbox"/>	E.C.A.	<input type="checkbox"/>

Highland valley-Index area 92-I-(5&6)

Recent developments are as follows:

Noranda have optioned a block of ground labelled the Torvan property from Bert Nesbitt. This block is about 24 claim size and is located west of the Trojan ground, south of Salmo Prince property, and north of the Shah group. The property map of Highland Valley area will indicate the location.

I understand that Archie Bell made the deal without consulting Bern Brynelsen. Bern then outlined a proposed deal on the Bx claims and sent it forward to Bell.

I don't know of any indication of mineral on the Torvan ground. The surface is similiar to the Shah (Raha)- that is, mostly muskeg, and overburden. ASARCO considered a deal on the BX group and then dropped it.

Johnson and Cramont, owners of the BX group brought the claims to me and offered them after they had discussed the proposed deal with Brynelsen, and, since I feel that this is an attempt to get two companies bidding against each other I indicated I was not interested until and after I could have a look at their showings.

(Brynelsen, has written Archie Bell suggesting he have a talk with you and a look at the location map I sent you.)

*Get map for Archie*

Twinduc -16 claim group Squamish B.C.

These claims are owned by Ernest Hanson of Squamish, are located near tide-water onthe Mamquam river, which is a tributary of Howe Sound in Vancouver Mining Div. Specimens show chalcopyrite and oxides of iron in a banded quartzite. Will examine the showings next monday with Hanson.

### General:

There are signs- the first ones that could be labelled encouraging- that the B.C. Socred government will rescind some of the objectionable features of the recent changes in the B.C. Mining Act. Apparently the Cabinet have lost control of the back benchers and a split has developed in the party. Asselstine has announced all the objectinable features of the two Bills will be rectified. One member- Bryan- from the North Shore left the party and several of the northern B.C. members are joining the rebellion. Various organizations to which I belong out here are doing all they can to make the various ministers see the errors of their ways and the results -if any-should be known ithin the next two weeks,

Regards,

*RM*

INSTRUCTIONS FOR USE OF THIS FORM

# INTER-OFFICE CORRESPONDENCE

FROM ..... Rod Macrae

DATE ..... Jan 23rd, 1958

TO ..... Ted Chisholm, Chief Geologist

SUBJECT ..... Enclosures:

92 I

## MESSAGE

(TO BE COMPLETED IN TRIPLICATE)

Dear Ted;

Enclosed are two tapes with various subjects covered, some of which will probably NOT be worth typing, and since I do not require copies of the subject, possibly you can judge what should be filed on paper.

To summarize the Highland valley developments; based on the work I have done to date on properties available, I do not think Skeena Silver property is attractive, Trojan Consolidated's development work to date indicates too small a tonnage to make a mine of the grade indicated which is around two percent, and I haven't visited the Shah group tho I plan to do so, on this coming Saturday. The Chataway Lake group has not found a showing although they are still working on their zones of alteration.

The Bethlehem copper development situation is interesting since ASARCO have to either state their plans for production by the coming September, or request an extension of time. They appear to have discarded as uneconomic, the large tonnage of point eight percent and are concentrating on the east jersey zone.

Andy Zborovszky brought in the maps and plan layouts of the Silvertip property at Tootsie Lake, the property Conwest optioned and dropped. He offered it on the basis of a total payment of 1/2 million dollars with no down payment and a firm commitment to do work. Zborovszky claims that Conwest never tested the main zone which is number 2 zone where all the 100-200 oz silver was found. I'll research the information and submit a summary.

Encl 2-tapes  
Highland valley map  
Skeena silver cl. map

Regards,

" " map info report

INTER-OFFICE CORRESPONDENCE