

680124

REDBIRD PROJECT

A PROPOSAL FOR ZINC-SILVER EXPLORATION

NELSON MINING DIVISION

82F/3W

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S U M M A R Y

This proposal outlines a zinc - silver - cadmium - lead exploration project adjacent to the former producing Reeves MacDonald Mine, 30 km east of Trail, B.C.

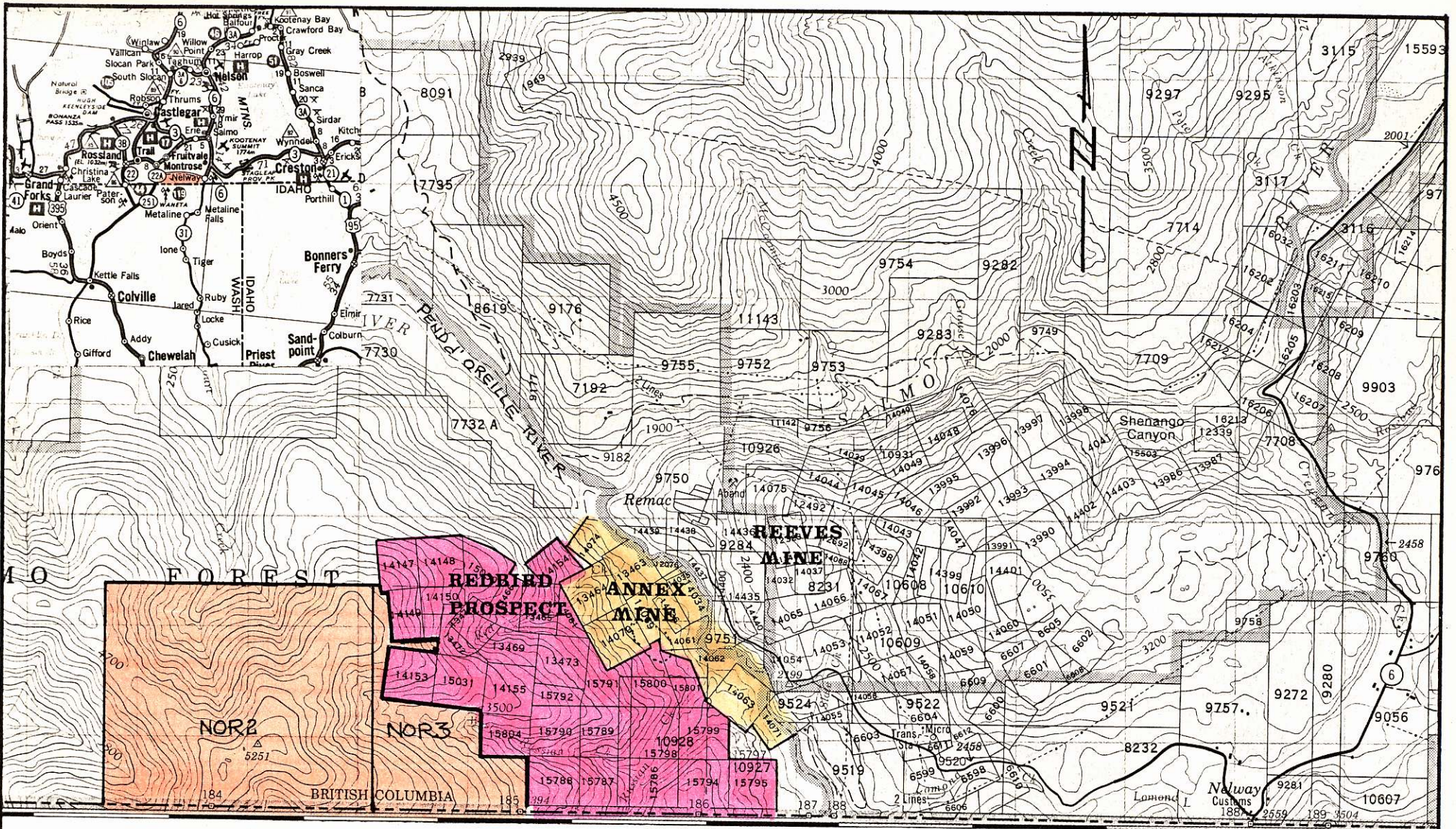
With moderate expenditures, it offers good chances of success and the possibility of quick progression to the definition stage.

Indicated minimum potential for underground mining, based on the writer's experience at the Reeves MacDonald Mine, is 12,500 tonnes per vertical meter of good grade zinc - silver mineralization with lesser values in lead and cadmium. Additional potential is expected in an area of favorable geology.

It involves the acquisition of property from Hecla Mining Company in addition to that owned by the writer. A third property, owned by Reeves MacDonald Mines Ltd. would be of interest should exploration indicate production possibilities. The area has good infrastructure and is highly attractive for mining.

LOCATION AND ACCESS ( figure 1)

The area is centered 6 km west of Nelway, a border crossing to the U.S.A. The properties are bounded to the south by the Canada - U.S.A. border, and are south of the Pend d'Oreille River. Salmo, the closest community, is 30 km by mainly paved road to the north. An alternate route is from Trail across B.C. Hydro's Seven Mile Dam on the Pend d'Oreille River, a road distance of approximately 50 km to the properties. Light vehicles can presently come within 3 km of the site of the proposed exploration.

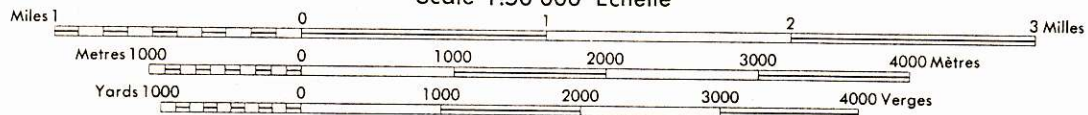


# SALMO

CANADA-UNITED STATES OF AMERICA

82 F/3

Scale 1:50 000 Échelle



Property Location FIGURE 1

CLAIM STATUS (Figure 2)

The area of immediate interest is covered by two groups of claims in the Nelson Mining Division.

<u>NAME</u>	<u>RECORD #</u>	<u>UNITS or CLAIMS</u>	<u>HECTARES</u>	<u>GOOD TO</u>	<u>OWNER</u>
NOR 2	2396	20	500	July 17/84	G.Klein
NOR 3	2397	15	180	July 17/85	G.Klein
REDBIRD GROUP		47	803	Crown grant	Hecla Mining Company
TOTAL		<u>82</u>	<u>1483</u>		

One other group of claims which may be of use for development and production facilities is noted on Figure 1 as the Annex Mine. These claims contain a tailings pond. A Bailey bridge crosses the Pend d'Oreille at this point.

GEOLOGY (Figure 2)

The reader is referred to Bulletin 41, "Stratigraphy and Structure of the Salmo Lead - Zinc Area", by Fyles and Hewlett, B.C. Department of Mines, 1959, for a description of the mining district.

In brief, the chief lead - zinc mineralized structure is the Reeves Limestone member of the lower Cambrian Laib formation. The Reeves Limestone was host for the former producing H.B. Mine (Cominco) Jersey and Emerald (Placer) and the Reeves MacDonald Mine.

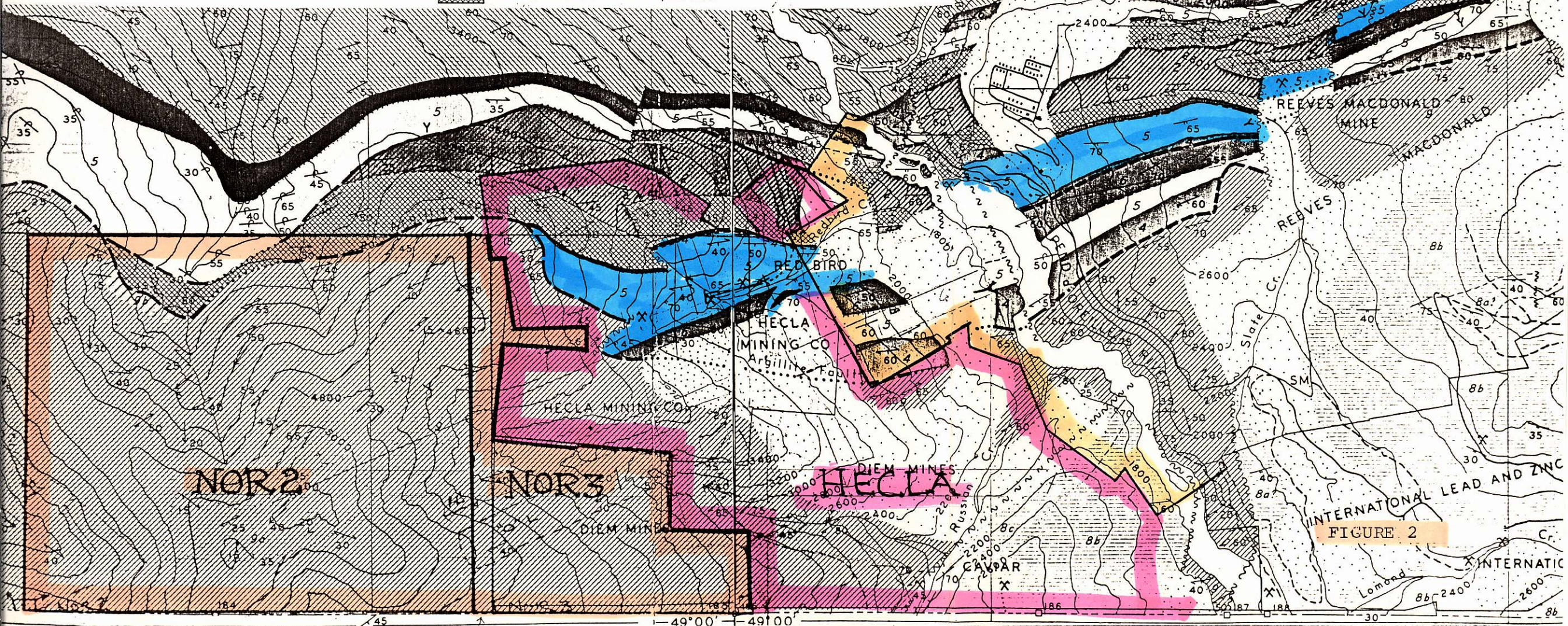
# GEOLOGICAL MAP OF THE SALMO LEAD-ZINC AREA

WEST KOOTENAY DISTRICT  
BRITISH COLUMBIA



Geology by J.T.Fyles and C.G.Hewlett 1952-1955

- LAIB FORMATION**
- UPPER LAIB UNDIVIDED: phyllite, schist, micaceous quartzite, and minor limestone
  - EMERALD MEMBER: black phyllite and argillite
  - REEVES MEMBER: grey limestone, minor dolomite
  - TRUMAN MEMBER: phyllite and argillite with lenses of limestone
- QUARTZITE RANGE FORMATION**
- RENO FORMATION: grey blocky and grey micaceous quartzite
  - NAVADA MEMBER: white quartzite and brown micaceous quartzite
  - NUGGET MEMBER: white quartzite



INTERNATIONAL LEAD AND ZINC  
FIGURE 2

At the Reeves MacDonald property, with which the writer is most familiar, the orebodies were vaguely stratiform, dolomite encased massive to disseminated sulphides containing sphalerite, pyrite, and galena in rough proportion of 5:5:1. These zones had a strike length in the order of 200m, were 6 - 8 m in width, strike near east - west and a steep plunge to the south west. The orebodies, while having distinctly different metal ratios from each other, had remarkable continuity in structure and mineralogy down plunge.

Cross cutting normal faults displace all orebodies (See Figure 3), effectively raising the segments to higher elevations than would be the case without faulting. None of the orebodies have been traced to mineralogical termination down plunge.

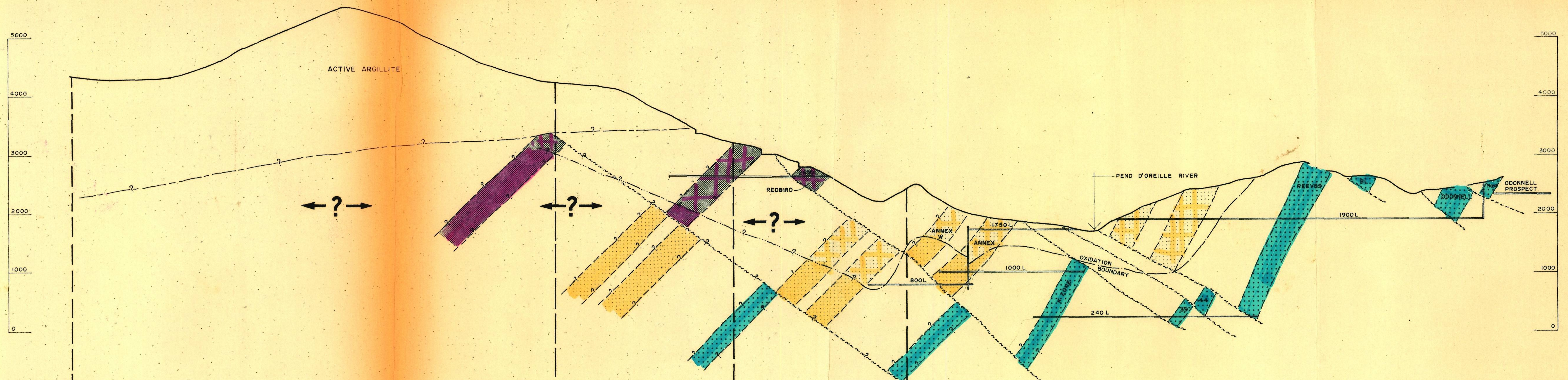
## PROPERTIES

#60 rock

### REEVES MACDONALD MINE (Figure 3)

This property, in production from 1959 to 1971, mined mainly one zone, the Reeves orebody. This zone has a known plunge length of over 2000 m, and is still open at depth. The mined grade of approximately 5,500,000 tonnes was 1.3% Pb, 4.0% Zn, .02% Cd, 10 gm Ag. Where last explored on the 240 level, this zone contained 3000 TPVM of 1.8% Pb, 4.5% Zn, .02% Cd and 15 gm Ag. This zone is the only known unmined mineralization on the Reeves and is approximately 450,000 tonnes. The property has no production facilities.

The ANNEX and WEST ANNEX orebodies were mined between 1970 and 1975, when the mine closed. These were much higher grade than that previously mined and give particular encouragement to the present project. Mined grade for the Annex was approximately



NOR 2

REDBIRD - NOR 3 OVERLAP

NOR 3 HECLA

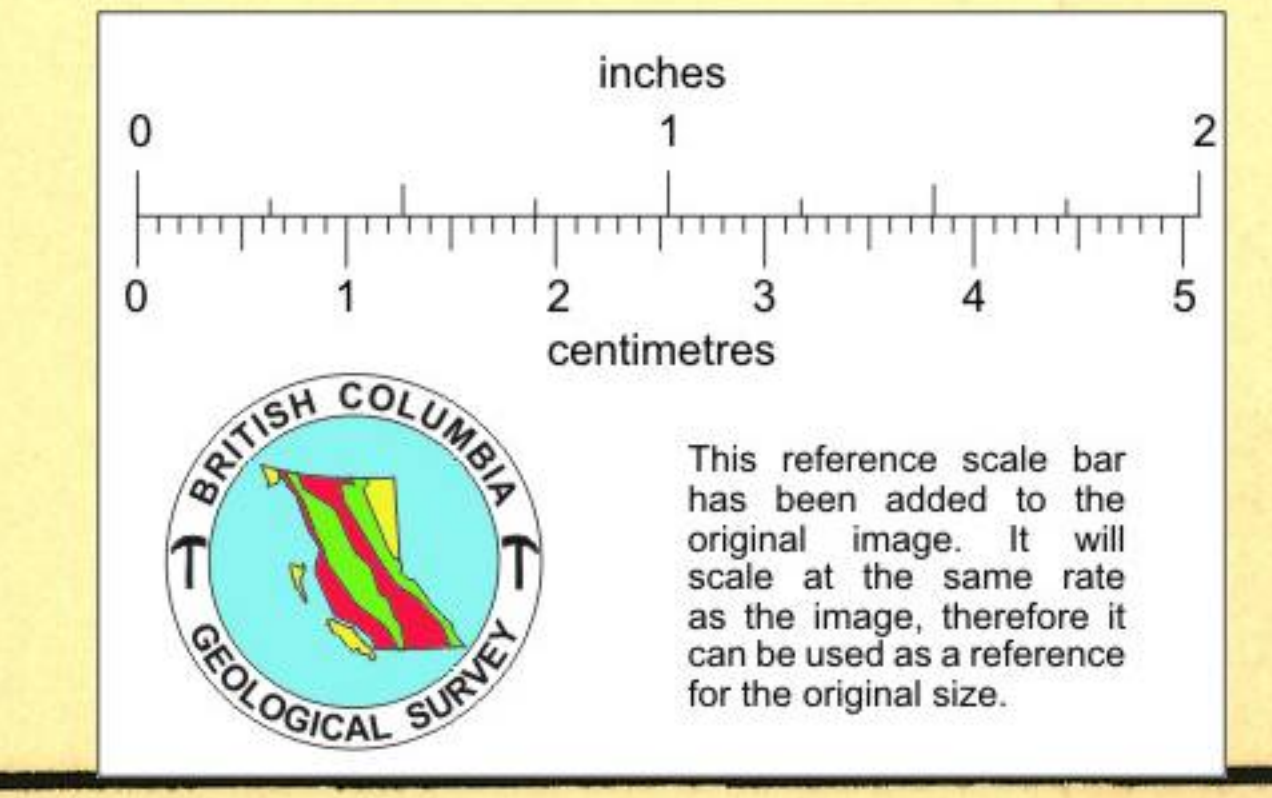
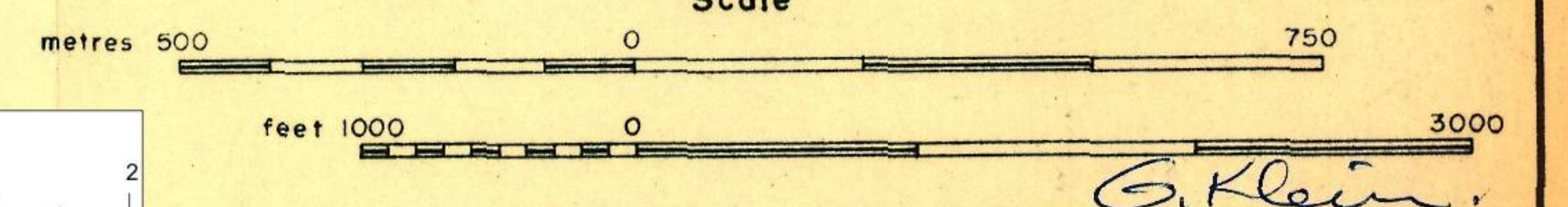
REDBIRD

HECLA REEVES

ANNEX

REEVES

LEGEND	
	ANNEX
	REEVES
	REDBIRD



REEVES - REDBIRD - NOR 2 & 3		
DATE	LONGITUDINAL SECTION LOOKING NORTH	DRAWN J.F.

FIG. 3

1% Pb, 8% Zn, .08% Cd, 85gm Ag for 3600 TPVM. Mined grade for the West Annex was approximately 3.5% Pb, 3.5% Zn, 0.02% Cd, 34 gm Ag for 2300 TPVM. The strike length of this zone was never determined because of boundary problems.

Substantial volumes of oxidized mineralization exist on the Reeves on both sides of the river. While conventional mining of these zones would be difficult because of their friable nature, there is the distinct possibility of in situ leaching.

#### RED BIRD

Exploration on surface zones started in the 1920's. Considerable drifting and drilling was done over the years with the last underground investigation being completed in 1962. Substantial amounts of oxidized mineralization were found. Drift indicated grade for the best zone over a length of 180 m and a width of 6 - 8 m is 6% Pb, 18.5% Zn (Cominco figures).

#### Underground from Reeves

In 1973 and 1974 Reeves MacDonald extended the 800 level drift onto the Redbird ground in order to locate the faulted off sections of the Annex orebodies. Oxidation hampered exploration of this zone, but some substantial widths of sulphides were found. The imposition of the Mineral Royalties Act eliminated incentive for continuing work and the project was abandoned. Inferred diluted sulphide reserves as calculated by Hecla total 2.6 million tonnes of .20% Pb, 4.20% Zn, .04% Cd, and 26 gm Ag to the 240 level.

However, the mining of this same zone on the Annex side would indicate that substantially higher grades could be expected. In



addition, there is excellent potential in that portion of the Reeves Limestone to the west of the West Annex orebody that has never been explored.

Substantial volumes of oxidized mineralization exist on the Redbird which would have good potential for in situ leaching.

#### NOR 2 and NOR 3 CLAIMS

These claims cover the downward projection of the Redbird mineralization and the probable westward extension of the Reeves Limestone under the capping of Active Argillite. This capping is thought to be an overthrust.

Two holes drilled by Cominco immediately to the west of NOR 2 claims confirms the continuity of the rock units under the argillite.

A low level VLF-EM and magnetometer survey over these claims in 1982 failed to indicate any windows of Reeves limestone in the argillite.

If faulting similar to that experienced at the Reeves is encountered on these claims, the net effect will be to bring the orebodies west and up.

#### P O T E N T I A L of R E D B I R D and N O R C L A I M S

Four distinct zones project on to these properties and additional potential exists in the unexplored portion of the Reeves Limestone, which elsewhere in the mine belt has had almost continuous mineralization.

KNOWN POTENTIAL

<u>ORE BODY</u>	<u>TPVM</u>	<u>% Pb</u>	<u>% Zn</u>	<u>% Cd</u>	<u>gm Ag</u>
ANNEX	3600	1.0	8.0	.08	85
ANNEX WEST	2300	3.5	3.5	.02	34
K ZONE	3000	1.8	4.5	.02	10
RED BIRD	3600	6.5	18.5		
TOTAL	<u>12500</u>	Tonnes per vertical meter - known zones			

In addition, high potential exists in the untested portion of the Reeves Limestone west of the Redbird.

TESTING OF POTENTIAL

Two possibilities exist:

- (1) Faulting of orebodies continues as at the Reeves.
- (2) Faulting ceases and the Reeves Limestone continues unbroken down plunge.

In the case of (1) a number of intermediate depth surface holes can trace the Reeves Limestone to the west. In the case of (2) the initial intermediate length holes would be followed by deep holes and/or underground exploration. (1) is thought to be more probable.

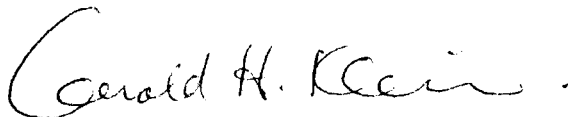
In either case it will be necessary to start from the known location of the Reeves Limestone (at the Redbird) to trace its ultimate location.

Initial drilling, to get below the argillite and probable depth of oxidation, involves 1000 meter holes. Three holes are thought

to be necessary for the first stage, ie, to determine the location of the Reeves Limestone. Based on the frequency of orebodies demonstrated by previous mining and exploration, each hole which cuts the Reeves Limestone has a 20% chance of encountering significant mineralization.

P R O P O S E D   S E Q U E N C E   o f   E V E N T S

- (1) Option Redbird property. Recent communication with Hecla indicates this property is for sale.
- (2) Option NOR property.
- (3) Drill first stage - to determine position of Reeves Limestone  
3 - 1000 m holes.
- (4) Drill second stage - tracing Reeves Limestone to west or depth, say, 6 - 1000 m holes or equivalent.
- (5) On successful results from (3) and (4) - further development by underground exploration.



G.H. KLEIN, P.Eng.

REFERENCES:

Fyles & Hewlett

Stratigraphy and Structure of the Salmo Lead Zinc Area, B.C. Department of Mines, Bulletin 41, 1959.

Assessment Report,  
#10580

VLF EM & MAG over the NOR Claims, WESTERN GEOPHYSICAL AERO DATA LTD. 1982.

Hecla Report

Description of the Redbird Property and Reeves MacDonald Mine, 1977