

# CORPORATION FALCONBRIDGE COPPER

MEMORANDUM


DATE: June 18, 1982  
 A TO: B. D. Simmons  
 COPIES A COPIES TO: M.J.K. (2)  
 DE FROM: P. W. A. Severin  
 SUJET SUBJECT: CIRQUE PB-ZN DEPOSIT, B.C.

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Please append this brief summary and rough valuation of the Cirque deposit to your copy of "Review of B.C. Base and Precious Metal Producers". Please include it in tables III and V.

" Potentially economic stratiform barite-sulphide deposits have recently (1979) been discovered in Devonian basinal facies rocks of the Kechita Trough of NE British Columbia. This new mineral district is over 180 Km long and includes nine major occurrences..... The Cirque is the largest known deposit, with reserves of at least 30 million tonnes averaging 10% combined lead-zinc and 48 grams per tonne silver." (CIM Bulletin, April 1982, pg. 99)

What became of C.F.C.'s investigation into the possibility of investing in Cyprus Anvil?

  
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 Paul W. A. Severin

js

CIRQUE PB-ZN DEPOSIT

94F/6,11

LOCATION:

Located approximately 330 Km NE of Smithers in the Akie River area, 65 Km north of Williston Lake.

OWNERSHIP:

Cyprus Anvil/Hudson's Bay Oil and Gas joint venture (%?)

HISTORY:

"The Cirque claims were staked by the Cyprus Anvil/Hudson's Bay Oil and Gas joint venture in July 1977 to cover an area of galena-bearing barite talus slopes and gossans..... Subsequent work outlined a coincident Pb-Zn soil anomaly over 2 Km in length. In 1978 and 1979, the property was explored by diamond drilling and this work resulted in the discovery of a major stratiform Ba-Zn-Pb-Ag deposit..... Extension of the deposit along strike and down dip is currently being tested by an intensive surface diamond drilling program. A road has now been completed to the property and plans are to drive an adit into the ore zone during 1982." (MacIntyre 1982)

GEOLOGY:

The Cirque deposit is contained within a thrust panel of Devonian shales. The deposit is a lensoidal to tabular body that varies from less than 5 metres thick on surface to greater than 35 metres down dip to the SW. No alteration zoning or vent zone has been defined at the Cirque, although an increase in pyrite relative to barite to the NW suggests a vent may be located in that direction. East of the deposit, nodular barite marks the position of the mineralized horizon.

RESERVES:

+ 30,000,000 Tonnes 2.2% Pb, 7.8% Zn, 48 grams per tonne (1.5 oz/T) Ag.

REFERENCES:

CIM Bulletin Vol. 75, No. 840, April 1982 Pg. 66-78, Pg. 99-113.

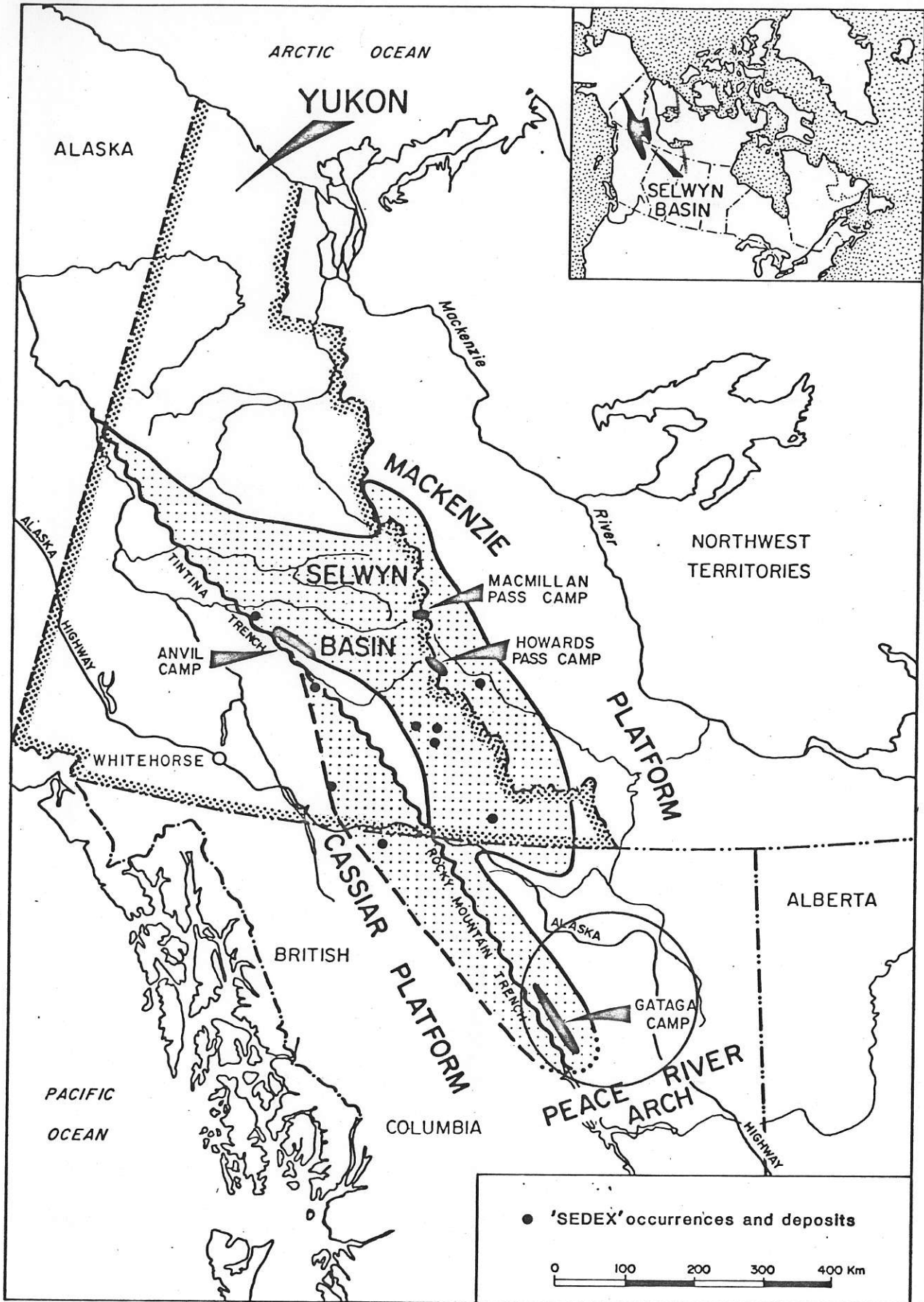


FIGURE 1. Location of the Selwyn Basin and the main sedex zinc-lead-silver camps.

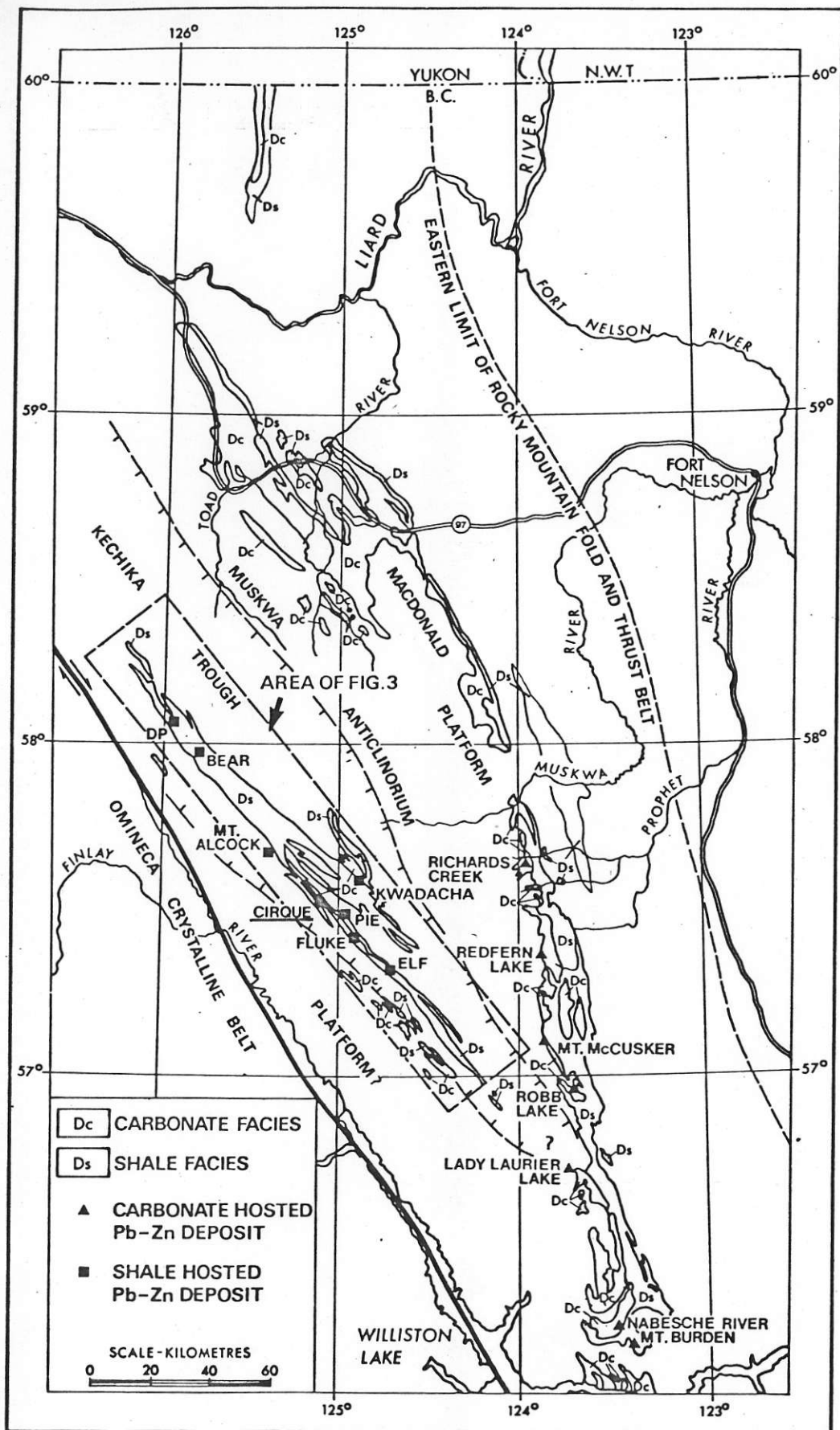
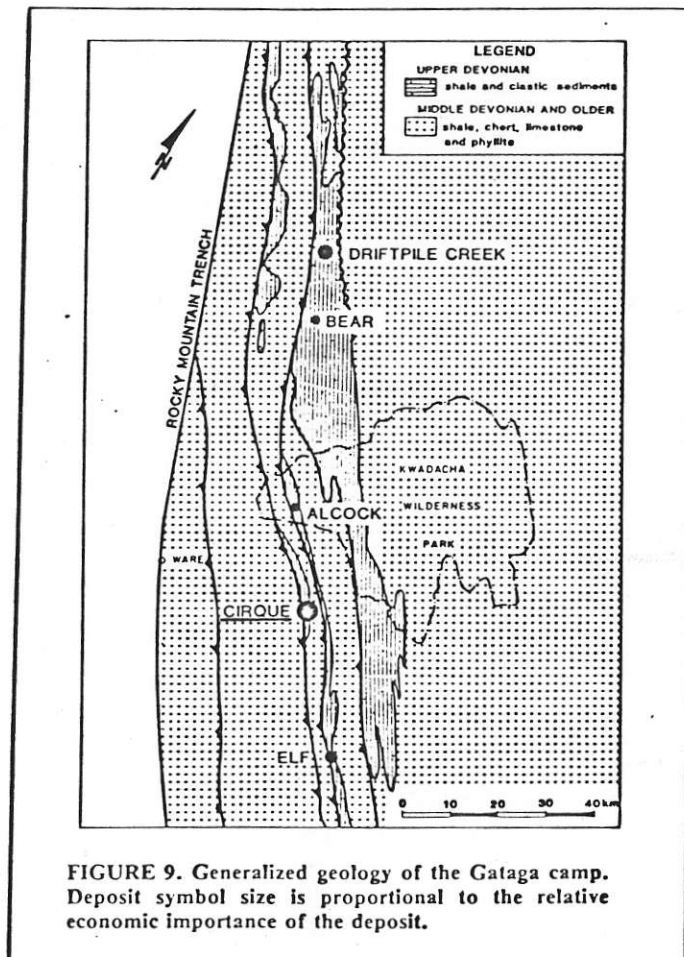
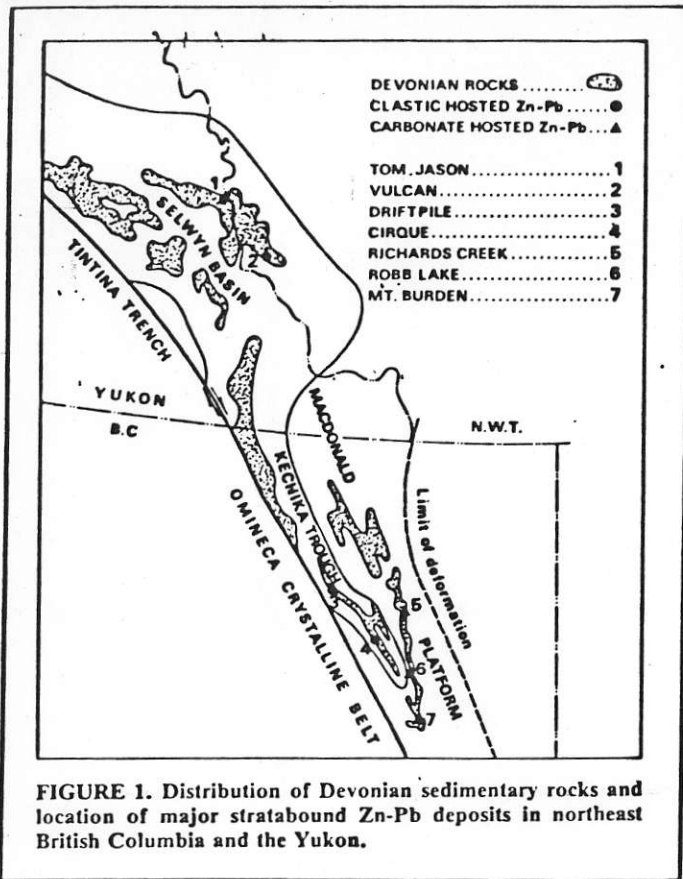
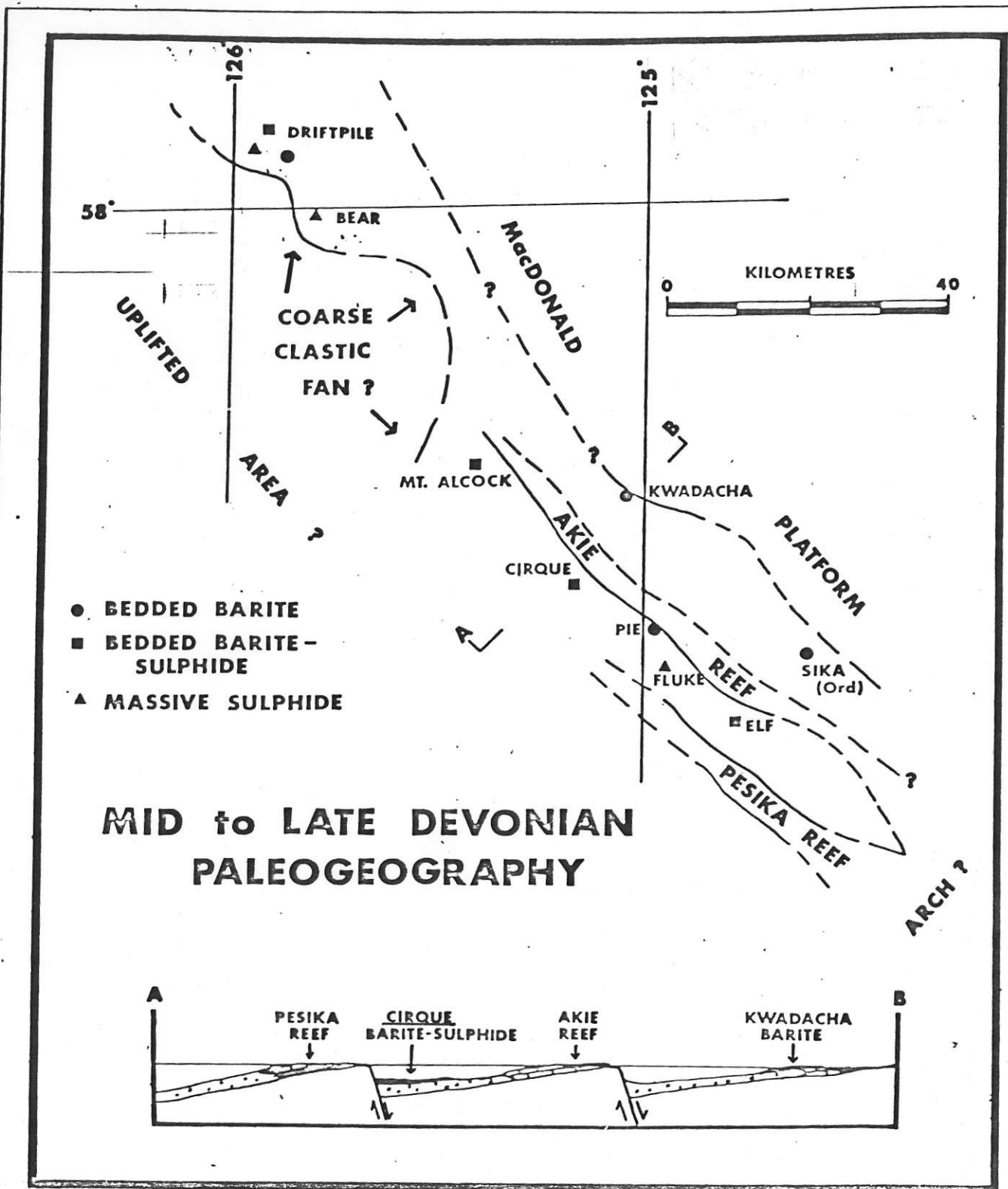


FIGURE 2. Distribution of Devonian shale and carbonate rocks in northeast British Columbia and location of major Zn-Pb ± Ba deposits. Also shown are the limits of the Kechika Trough and boundaries of the Rocky Mountain Fold and Thrust Belt.





• FIGURE 8. Reconstruction of the Mid to Late Devonian paleogeography of the Driftpile Creek - Akie River district, and location of mineral deposits.

VALUATION: Cirque Pb-Zn Deposit

Assumptions: 28,900,000 Tonnes 2.2% Pb, 7.8% Zn, 1.5 oz/T Ag.

Recovery: 80% Pb, 80% Zn, 70% Ag.

Production: 1,700,000 TPY

Productive Life: 17 years

Capital Cost: ? \$250,000,000 ?

Pb = \$0.40/lb. CAN

Zn = \$0.45/lb. CAN

Ag = \$12.00/oz. CAN

Operating Costs: ? \$45.00 ??

Annual Revenue	\$153,000,000
Operating Costs	\$ 76,500,000
NPV (15%)	\$-13,200,000

ESTIMATED CASH FLOW - Cirque Pb-Zn Deposit (\$000,000)

1            2            3            4            5            6            8            9            10 → 22

REVENUE						153.0 →	153.0	153.0	153.0	153.0	153.0
OPERATING COSTS						76.5	76.5	76.5	76.5	76.5	76.5
NET INCOME BEFORE ALLOWANCES						76.5	76.5	76.5	76.5	76.5	76.5
DEPRECIATION ALLOWANCE						76.5	76.5	20.5	-	-	-
TAXABLE INCOME						Nil	Nil	56.0	76.5	76.5	76.5
TAX (55%)						Nil	Nil	30.8	42.1	42.1	42.1
TAX CREDIT						-	-	-	-	-	-
TAX PAYABLE						Nil	Nil	30.8	42.1	42.1	42.1
NET INCOME AFTER TAXES						76.5	76.5	45.7	34.4	34.4	34.4
CAPITAL COSTS	50.0	50.0	50.0	50.0	50.0	-	-	-	-	-	-
AFTER TAX CASH FLOW	-50.0	-50.0	-50.0	-50.0	-50.0	76.5 →	76.5	45.7	34.4	34.4	34.4

0            1            2            3            4            5            6 → 8            9            10            22

Net Present Value (1982)

$$\begin{aligned}
 NPV &= 34.4 (CPVF_{13}^{15}) (PVI_9^{15}) + 45.7 (PVF_9^{15}) + 76.5 (CPVF_3^{15}) (PVF_5^{15}) - 50 (CPVF_5^{15}) \\
 &= 34.4 (5.583) (0.2843) + 45.7 (0.2843) + 76.5 (2.283) (0.4972) - 50 (3.352) \\
 &= 54.6 + 13.0 + 86.8 - 167.6 \\
 &= -13.2
 \end{aligned}$$