

CORPORATION FALCONBRIDGE COPPER

FILE
MEMORANDUM

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93B/15

DATE: April 3, 1987
TO: D. H. Watkins
COPIES TO: L. D. Pirie, C. M. Burge
FROM: A. J. Davidson
SUBJECT: QR Deposit

An excellent "tour" of the QR deposit core was arranged by Colin Burge on April 1. Reserves at QR are:

Main Zone	2.5 million tons @ 0.1 oz/ton Au (open pit)
West Zone	300,000 tons @ 0.25 oz/ton Au (ug)
MidWest Zone	650,000 tons @ 0.20 oz/ton Au (still open).

Dome Mines owns this deposit with no underlying options or royalties. They are still lukewarm about the deposit but apparently are commencing an in-house feasibility study. Only limited metallurgy has been done on the Main Zone with 95%+ recovery of the gold in a flotation concentrate. Dome may wish to consider a partner on this project.

Location/Access

The property is located on the north side of the Quesnel River about 80km from Quesnel. Access is by logging roads to 8km from the property and then by 4WD road to the property. Dome is upgrading the last 8km this year. Power is available from the south side of the Quesnel River.

Geology

The deposit is located at the top of a pile of alkaline Triassic (Nicola?) basalt in a carbonate rich zone of basaltic breccias, epiclastics and silt and limestones. This carbonate rich zone has been altered to an epidote skarn by the intrusion of the alkaline QR diorite. Although Dome discuss this deposit as occurring in a propylitic alteration front around a porphyry, my interpretation of it is that it is a skarn deposit and that the major controls are the presence of a carbonate-rich horizon and the alkalic intrusion.

Mineralization

The gold mineralization is found in this epidote-pyrite skarn and the gold can be up to 1mm in size. Nugget effect is severe within the individual deposits but kriging indicates that the deposit as a whole is fairly uniform. Some narrow high grade intersections are 1.1m of 0.55 oz/ton and individual assays of up to 3 oz/ton have been received.

Deposits

The Main Zone (2.5 million tons @ 0.10 oz/ton Au) measures 300m along strike by 75m down dip by 40m thick. This Zone is open pittable, discordant to stratigraphy and dips between 40-70° north. It lies 500m east of the Mid West Zone and was discovered in 1977.

The Mid West Zone (0.65 million tons @ 0.20 oz/ton Au) measures 300m along strike by 100m down dip by 9-10m thick. Depth to the top of this zone is 200m, it dips 80° south (parallel to stratigraphy), lies 400m east of the West Zone and was discovered in 1986.

The West Zone (0.3 million tons @ 0.25 oz/ton Au) measures 400m along strike by 50m down dip by 5m thick. The Zone outcrops at one end but does reach 40m in depth, it dips 80° south and was discovered in 1983.

Potential

The gold mineralization is restricted to the outer edge of the skarnified favourable carbonate rich horizon which itself is restricted to within 500m of the QR stock. However there is good potential to find additional lenses produced by downfaulting along N-S faults and by thrusting along two shallow thrust faults. There is also some potential that the West Zone may roll over to the west.

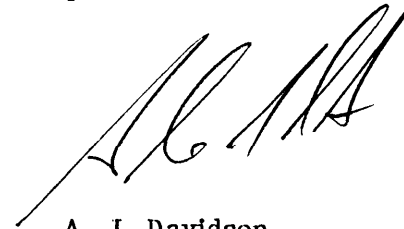
Economics

The economics of the QR deposit at present are favourable but are very dependent on the capital cost. Presumably one would mine the open pit portion first in order to minimize capital and preproduction costs and then mine

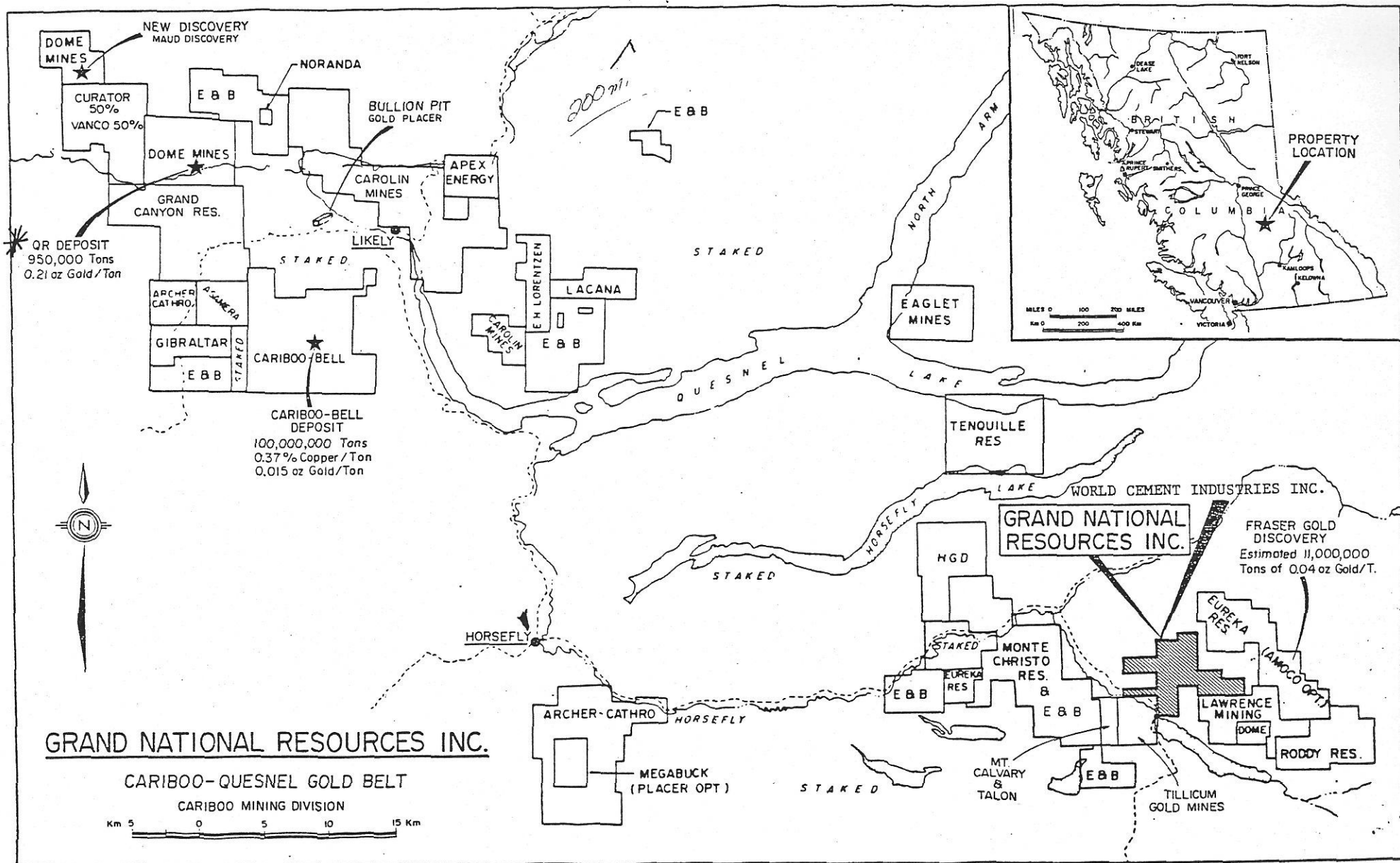
both underground zones. In the attached DCF's I have included a DCF for the underground only, for the open pit only and for them combined with the open pit being mined first. In this scenario the project has an NPV of \$32 million and an IRR of 32.9%.

Follow Up

If we wish to follow up this project with Dome to get an idea of their plans (and we probably should), Wally Bruce (V.P. Exploration) in Toronto is most familiar with the project. Meanwhile we are beginning a compilation to look for coincidences of the major criteria of this deposit i.e. alkalic intrusive, top of Triassic and carbonate rich/skarn horizon.

A handwritten signature in black ink, appearing to read 'A. J. Davidson', written in a cursive style.

A. J. Davidson



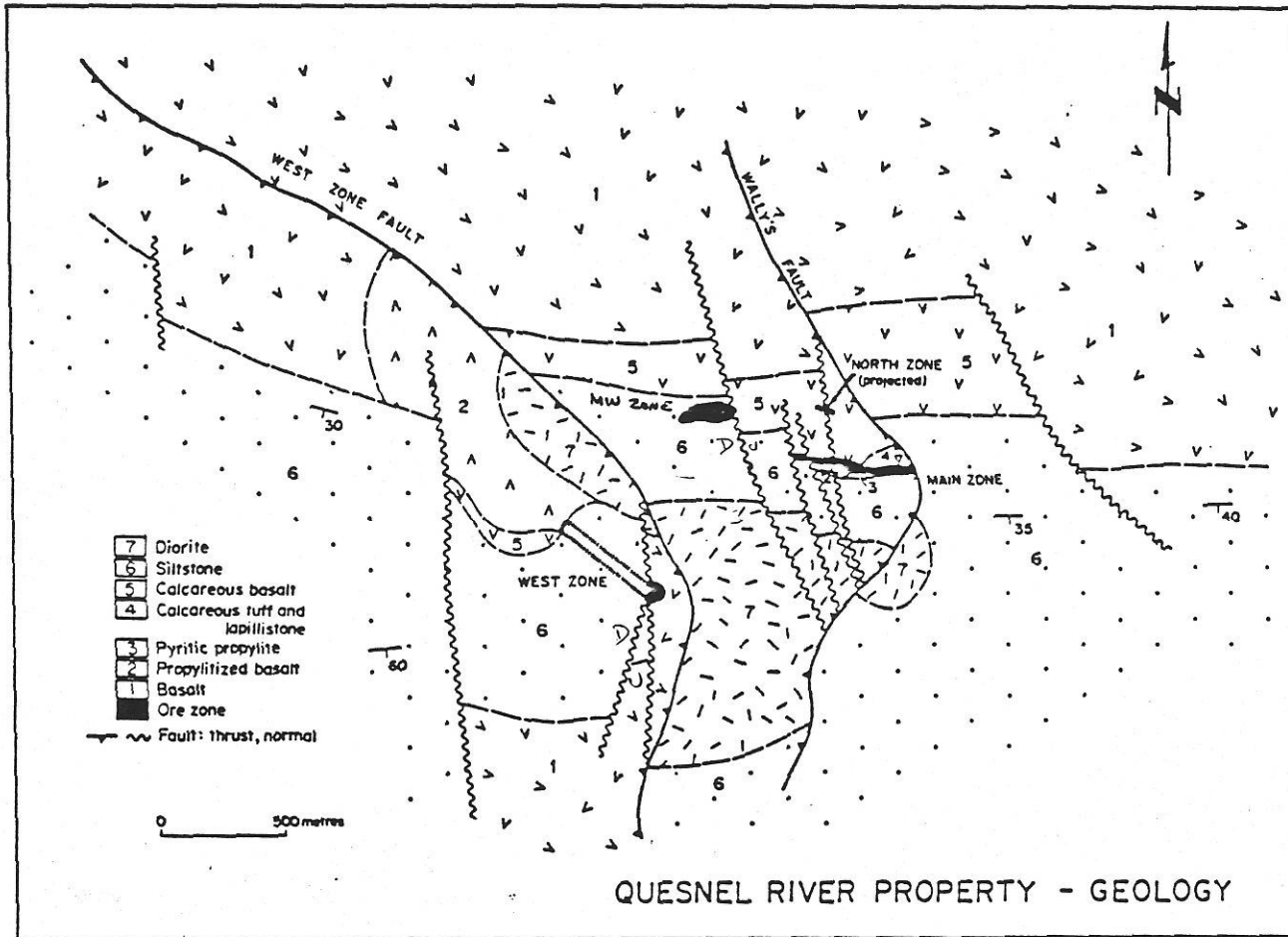
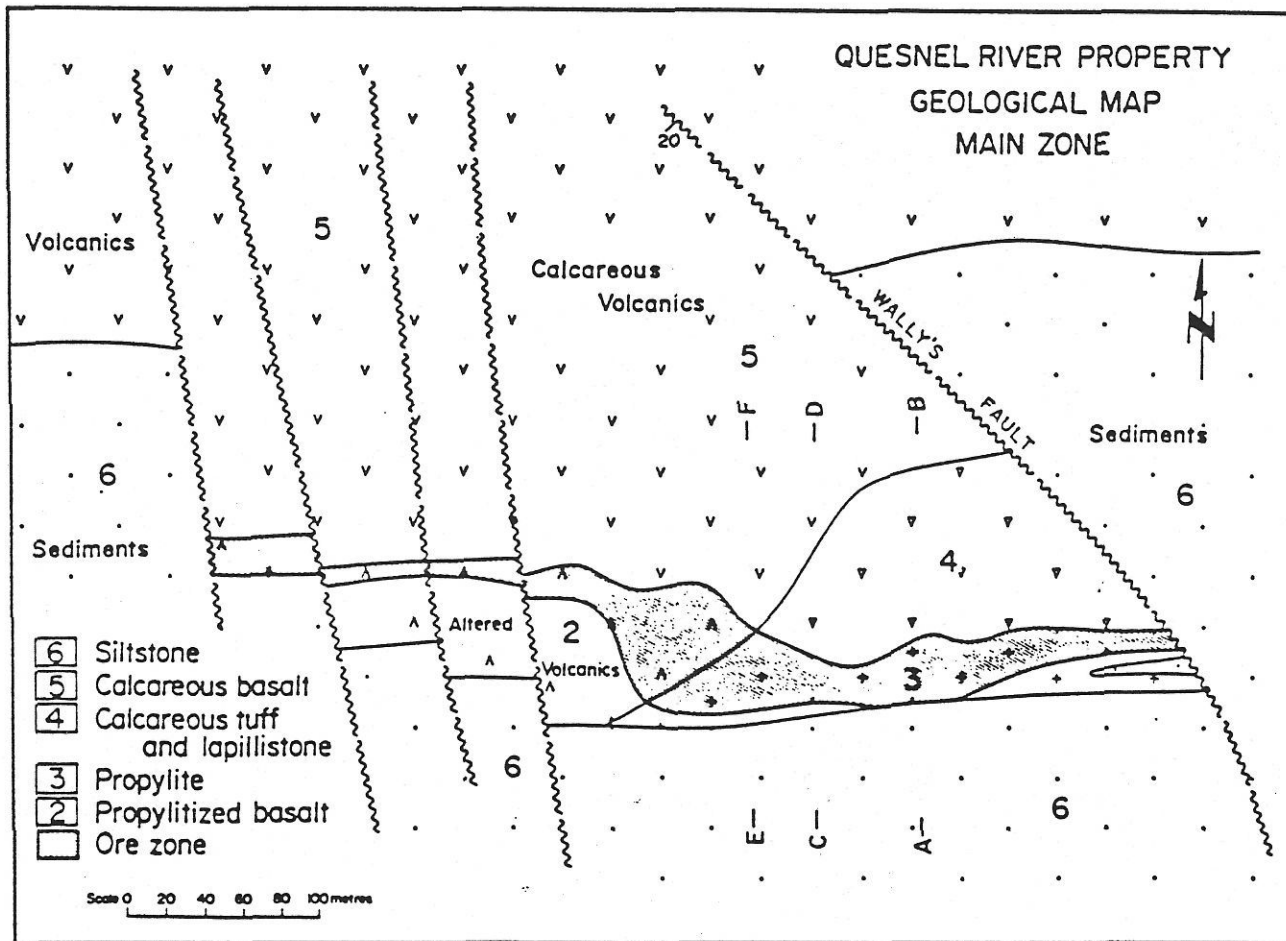
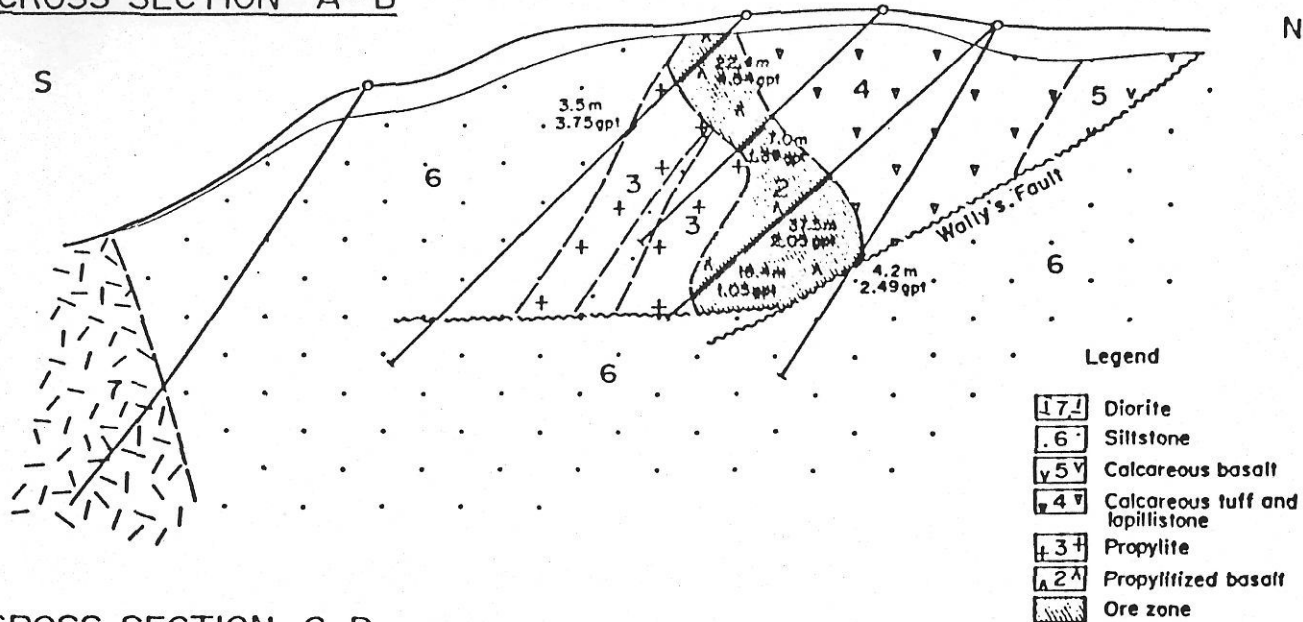


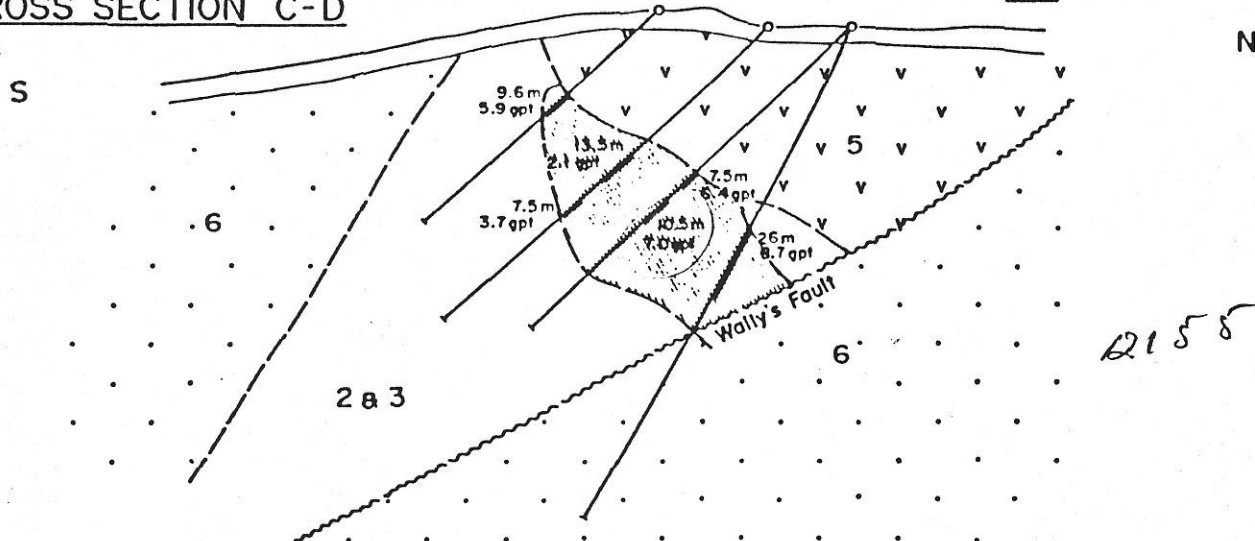
Fig. 1



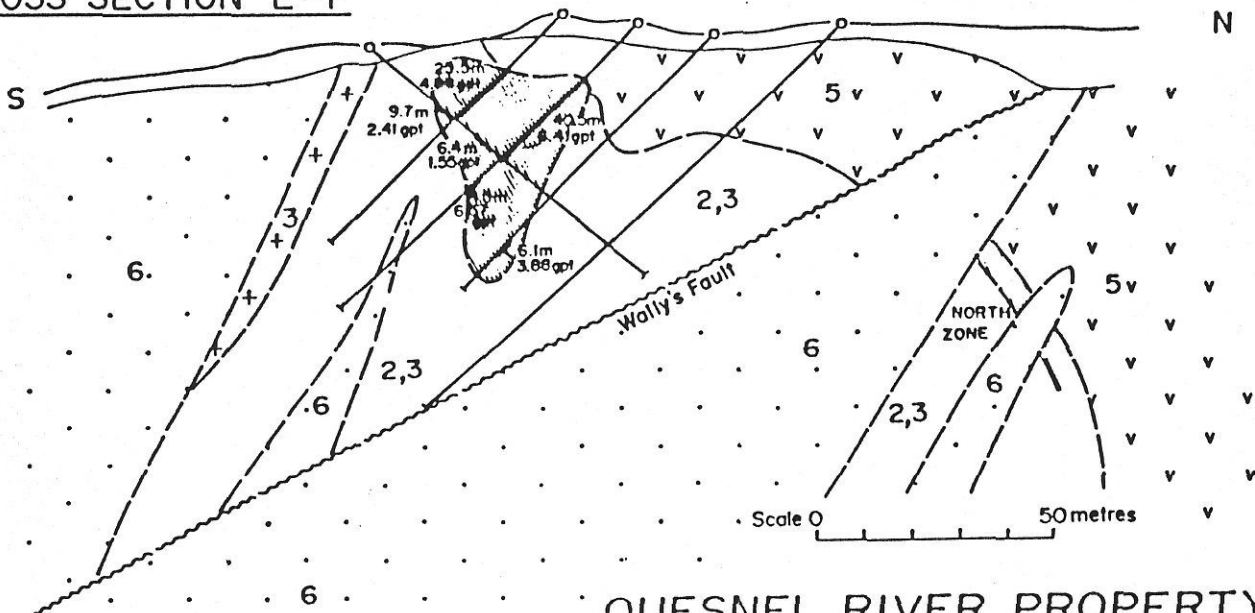
CROSS SECTION A-B



CROSS SECTION C-D

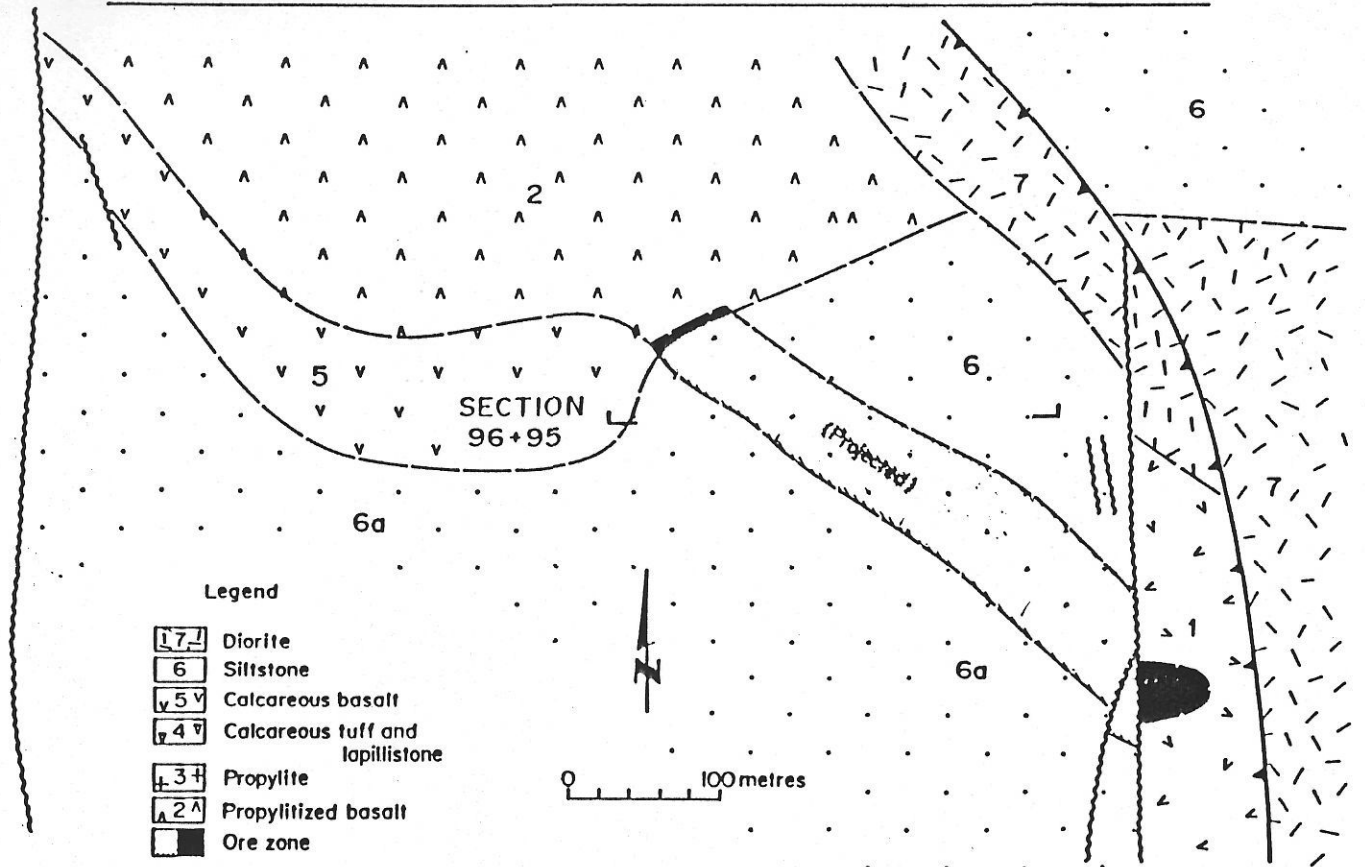


CROSS SECTION E-F



QUESNEL RIVER PROPERTY

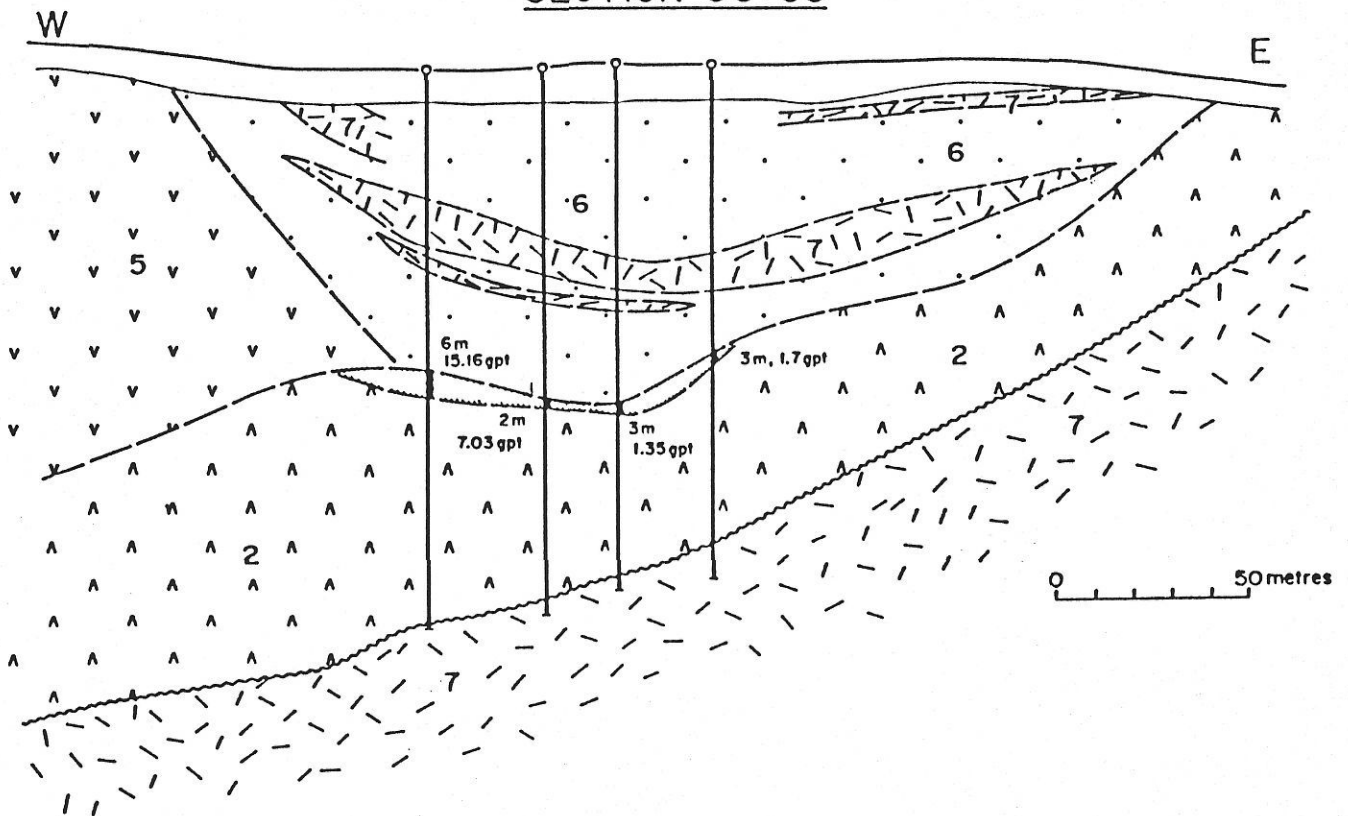
QUESNEL RIVER PROPERTY - WEST ZONE GEOLOGY PLAN



Legend

17	Diorite
6	Siltstone
5	Calcareous basalt
4	Calcareous tuff and lapillistone
3	Propylite
2	Propylitized basalt
■	Ore zone

SECTION 96+95



MINERAL INVENTORY	TONNAGE 2.500 MILLION TONS				
	COPPER	LEAD	ZINC	GOLD	SILVER
GRADE				0.100	
	%	%	%	Oz/T	Oz/T
RECOVERY %				95.0	
COMMODITY UNIT	lb.	lb.	lb.	Oz.	Oz.
PRICE \$US	\$0.620	\$0.235	\$0.470	\$400	\$5.700
EXCHANGE RATE	1.400	1.400	1.400	1.400	1.400
PRICE \$CAN	\$0.868	\$0.329	\$0.658	\$560	\$7.980
TREATMENT CHARGES \$CAN	\$0.423	\$0.300	\$0.336	\$19.41	\$1.257
CONTRIBUTION TO NSR/TON	\$0.0	\$0.0	\$0.0	\$51.4	\$0.0
% TOTAL NSR	0%	0%	0%	100%	0%

OPEN PIT

PRODUCTION	DCF RESULTS
1500 MINING RATE TONS/DAY	10.0 % COST OF CAPITAL
\$25.0 OPERATING COST \$/TON	NPV IRR
4.6 YEARS PRODUCTION	\$15.5 27.0%

% OF YEAR IN PRODUCTION	PREPRODUCTION				PRODUCTION							
	0%	0%	100%	100%	100%	100%	57%	0%	0%	0%	0%	
YEARS IN PRODUCTION	0.0	0.0	1.0	2.0	3.0	4.0	4.6	4.6	4.6	4.6	4.6	
YEAR	1	2	3	4	5	6	7	8	9	10	11	

CASH FLOW: BEFORE TAX AND FOR 100 % OF PROJECT

CAPITAL	\$20.0	\$10.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TONS PRODUCED	0.0	0.0	0.5	0.5	0.5	0.5	0.3	0.0	0.0	0.0	0.0
GROSS INCOME	\$0.0	\$0.0	\$28.1	\$28.1	\$28.1	\$28.1	\$15.9	\$0.0	\$0.0	\$0.0	\$0.0
OPERATING COST	\$0.0	\$0.0	\$13.7	\$13.7	\$13.7	\$13.7	\$7.8	\$0.0	\$0.0	\$0.0	\$0.0
PROJECT NET INCOME	\$0.0	\$0.0	\$14.4	\$14.4	\$14.4	\$14.4	\$8.2	\$0.0	\$0.0	\$0.0	\$0.0
PROJECT CASH FLOW	(\$20.0)	(\$10.0)	\$14.4	\$14.4	\$14.4	\$14.4	\$8.2	\$0.0	\$0.0	\$0.0	\$0.0

DCF ANALYSIS:QR DEPOSIT COMBINED

APRIL 2,1987

SEQUENTIAL

1. OPEN PIT
2. UNDERGROUND

MINERAL INVENTORY	TONNAGE 2.500 MILLION TONS				
	COPPER	LEAD	ZINC	GOLD	SILVER
GRADE				0.100	
	%	%	%	Oz/T	Oz/T
RECOVERY %				95.0	
COMMODITY UNIT	lb.	lb.	lb.	Oz.	Oz.
PRICE \$US	\$0.620	\$0.235	\$0.470	\$400	\$5.700
EXCHANGE RATE	1.400	1.400	1.400	1.400	1.400
PRICE \$CAN	\$0.868	\$0.329	\$0.658	\$560	\$7.980
TREATMENT CHARGES \$CAN	\$0.423	\$0.300	\$0.336	\$19.41	\$1.257
CONTRIBUTION TO NSR/TON	\$0.0	\$0.0	\$0.0	\$51.4	\$0.0
% TOTAL NSR	0%	0%	0%	100%	0%

NSR
TOTAL

PRODUCTION

DCF RESULTS

1500 MINING RATE TONS/DAY	10.0 % COST OF CAPITAL
\$25.0 OPERATING COST \$/TON	NPV
4.6 YEARS PRODUCTION	IRR
	\$32.0 32.9%

	PREPRODUCTION			PRODUCTION							
% OF YEAR IN PRODUCTION	0%	0%	100%	100%	100%	100%	57%	100%	100%	70%	100%
YEARS IN PRODUCTION	0.0	0.0	1.0	2.0	3.0	4.0	4.6	5.6	6.6	7.3	8.3
YEAR	1	2	3	4	5	6	7	8	9	10	11

CASH FLOW: BEFORE TAX AND FOR 100 % OF PROJECT

CAPITAL	\$20.0	\$10.0	\$0.0	\$0.0	\$0.0	\$0.0	\$10.0	\$0.0	\$0.0	\$0.0	\$0.0
TONS PRODUCED	0.0	0.0	0.5	0.5	0.5	0.5	0.3	0.4	0.4	0.3	\$0.0
GROSS INCOME	\$0.0	\$0.0	\$28.1	\$28.1	\$28.1	\$28.1	\$15.9	\$40.3	\$40.3	\$29.8	\$0.0
OPERATING COST	\$0.0	\$0.0	\$13.7	\$13.7	\$13.7	\$13.7	\$7.8	\$21.9	\$21.9	\$16.2	\$0.0
PROJECT NET INCOME	\$0.0	\$0.0	\$14.4	\$14.4	\$14.4	\$14.4	\$8.2	\$18.4	\$18.4	\$13.6	\$0.0
PROJECT CASH FLOW	(\$20.0)	(\$10.0)	\$14.4	\$14.4	\$14.4	\$14.4	(\$1.8)	\$18.4	\$18.4	\$13.6	\$0.0