

DRAFT FOR DISCUSSION PURPOSES ONLY

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Afton Project

FROM TIM B.

**Proposed Drill Programs
To test the Mineral Zones
Below the Former Producing
Afton And Pothook Open-Pit Mines**

*WJR FILE
PMT SUR*

DITE

Location:

The former producing Afton mine and mill-site is located 13 kilometers west of Kamloops on the main highway. The mill facilities continue to be serviced by power, water, and gas.

*MARY DAVIES
O AFTON*

In-house Report
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SCHEDULE "A"
POT CLAIMS (32 Units)

Introduction:

The Afton Mine Property comprising the Afton and Pothook copper-gold deposits is located beside the Trans-Canada Highway, 13 kilometres west of Kamloops and 420 kilometres north-east of Vancouver at latitude 50° 39' N and longitude 120° 31' W.

From 1978-88, 27 million tons of ore grading 1% copper, 0.58 grams/tons gold and 4 grams/ton silver were mined from a 280 meter deep open-pit at a 0.25% copper cutoff grade. 450 million pounds of copper and 400,000 ounces of gold were recovered. The Pothook Deposit 700 metres east of the Afton Pit produced 2.4 million tons containing .38% copper and .8 grams/ton (0.027 ounces/ton) gold.

The Afton and Pothook Deposits both have excellent potential for the development of further ore reserves. At Afton only 7 drill holes for a 300 meter depth below the open pit have indicated the Afton ore-body continues to depth at higher grades averaging 1.55% copper and 0.47 ounces/ton (1.5 gram/ton) gold. The current estimated 13 million tons should increase to over 20 million tons with further drilling.

The potential of the Pothook Deposit are indicated by three drill holes which show the mineralized zone continues for approximately 100 metres below the floor of the open pit floor with an average 30 meter width containing .4% copper and .01 ounces per ton gold.

ACCESS

The Afton property is accessed by the Trans-Canada Highway and secondary gravel or dirt ranching and mining roads. Rolling summits and broad uplands are the prominent topographic features, with elevations lying between 610 and 1100 metres

PROPERTY STATUS

The Afton Property consists of 32 located mineral claims (staked in June-July/99) which comprise approximately 2000 acres. The Property is owned 100% by Westridge Enterprises Ltd. (John Kruzick) and Indogold Development Ltd. (John Ball).

Afton Drill Results and Reserves:

1. Previous open-pit mining:

Mined: 10 years from 1978 to '87
Strip ratio: 3 : 1
Length: 600 meters
Width: Average 90 meters
Pit depth: 280 meters (900 feet)
Tonnage: 27 million tons mined and milled
Grade: .1% copper, .6 grams (.02 ounce)/t gold
Recovered: about 400,000 ounces gold

2. Reserves under the open-pit from 280 to 600 meters depth:

Width: Average 80 m
Length: 200 meters
Depth: 300 m
Tonnage: 13 mil tons (drilling will most likely increase to 20 mil tons)
Grade: 1.55% copper, .047 ounce/t gold
Contained gold: 550,000 ounces (if 20 mil tons this increases to 800,000 ozs)
Contained copper: 400 mil pounds

(Reference: Length, width, depth, and grade copied from Afton drill hole results together with Afton and government cross-sections and maps.)

3. Mineralized Zone extension to depth:

In 1973 two deep holes intersected the zone:

DDH 1973-32:

drilled at 70 degrees intersected 200 meters from 280 meters to 450 meters deep of over 1% copper which was actually probably over 1.5% copper.

over 1% and probably over 1.5% copper (actual grade not reported)
200 meters (150 meters true width)

DDH 1973-47:

drilled at 80 degrees from the same setup intersected 185 meters of 1.5% copper.
Gold was not reported.

1.5% copper, (gold not reported)
185 meters (140 m true width)

During 1980 five holes intersected the mineralized zone beneath the open-pit floor at 280 meters depth. The deepest hole was at 600 meters depth so the 5 holes tested the 320 deep meter zone:(See holes are on the Afton cross-section)

The 5 diamond drill holes are:

80-1	<u>1.73% Cu, .018 oz (.55 gr)/t Au</u> 95 m (62 m true width)	
80-2	<u>1.9% Cu, .02 oz (.6 gm)/t Au</u> 170 m (80 m true width)	
80-3	<u>1.44% Cu, .035 oz (1gr)/t Au</u> 82 m (25 m true width)	
80-4	<u>1.14% Cu, .107 oz (3 gm)/t Au</u> 70 m (25 m true width)	
80-5	<u>1.24% Cu, .048 oz (1.4 gm)/t Au</u> 55 m (15 m true width)	(350 m. below pit-bottom)

Pothook Drill Results and Reserves:

1. Previous open-pit mining:

Mined:	11 months from July, '87 to May, '88
Strip ratio:	1.9 : 1
Length:	250 meters (800 feet)
Width:	From 50 to 100 meters that averaged 60 meters
Pit depth:	100 meters (330 feet)
Tonnage:	milled 2.4 million tons
Grade:	.35% copper, .8 grams (.024 ounce)/t gold (Reference: From verbal communication with Afton Mines who said the gold grade was not the published .2 gr/t but rather .8 gr/t based on the mining records.)
Recovered:	60,000 ounces of gold in 11 months
Reserves:	Unknown as only 2 drill-holes tested below pit floor. The mineralized zone should continue to depth as the 2 holes intersected ore grades and the Afton copper-gold zone continues to 600 meters depth.

2. Mineralized Zone extension to depth:

During 1986 in-fill drilling, 3 holes intersected the mineralized zone beneath the open-pit floor. The width and grade of these 3 holes are shown on the Pothook Cross-section. The 3 diamond drill holes are:

86-13	<u>.3% Cu, .008 oz/t Au</u> 62 m	(10 meters below pit-floor)
86-21	<u>.4% Cu, .01 oz/t Au</u> 25 m	(40 meters below pit-floor)
86-20	<u>.5% Cu, .013 oz/t Au</u> 40 m	(60 meters below pit-floor)

Afton Proposed Drill Program:

Phase 1:

Target: The south dipping 80 meter wide mineral zone below the pit-bottom

Plan: To intersect the zone from 100 to 200 m. below the pit-bottom.

Location: A low bench on the south slope of the open pit

Diamond Drill Holes: 3 near vertical 300 meter (950 foot) holes
300 meter/hole X 3 holes = 900 meters

Estimated Cost: 900 meters X \$60/meter = \$54,000

Phase 2:

Target: The south dipping 80 meter wide mineral zone below the pit-bottom

Plan: To intersect the zone from 150 to 300 m. below the pit-bottom from a low bench on the south slope of the open pit.

Diamond Drill Holes: 5 near-vertical 400 meter holes
400 meter/hole X 5 holes = 2000 meters

Estimated Cost: 2000 meters X \$60/meter = \$120,000

Total Cost of phase 1 and 2: \$54,000 + \$120,000 = \$174,000

Pothook Proposed Drill Program:

Phase 1:

Target: The steeply south dipping 40 meter wide mineral zone

Plan: To intersect the zone from 50 to 150 m. below the pit-bottom.

Location: A low bench on the south slope of the open pit

Diamond Drill Holes: 3 near vertical 200 meter (650 foot) holes
200 meter/hole X 3 holes = 600 meters

Estimated Cost: 600 meters X \$60/meter = \$36,000

Phase 2:

Target: The steeply south dipping 40 meter wide mineral zone

Plan: To intersect the zone from 100 to 200 m. below the pit-bottom.

Location: A low bench on the south slope of the open pit

Diamond Drill Holes: 5 near-vertical 300 to 400 meter holes
300 meter/hole X 5 holes = 1500 meters

Estimated Cost: 1500 meters X \$60/meter = \$90,000

Total Cost of phase 1 and 2: \$36,000 + \$90,000 = \$126,000

Afton Projected Metal Values, Costs, and Profits:

7. Afton Open Pit history:

Mined 1978 to '88	27 million tons
Grade	1% copper, .02 ounce (.6 gram)/t Au
Recovered gold	400,000 ounces
Recovered copper	450 mil pounds
Open pit depth	280 meters

8. Estimated reserves under the Afton open-pit from 280 to 600 meters

Depth:

Width	80 m
Length	200 meters (drilling will probably increase to 300 m)
Depth	300 m
Tonnage	13 mil tons (drilling will probably increase to 20 mil t.)
Grade	1.55% copper, .047 ounce/t gold
Contained gold	600,000 ounces (if 20 mil. t. increases to 800,000 ozs)
Contained copper	600 mil pounds

(Reference: Length, width, depth, and grade copied from Afton drill hole results together with Afton and B.C. government cross-sections and maps.)

9. Gross Metal Values (Can \$):

Gross metal value/ton:

$$\text{copper} = \$38 \text{ (at } \$1.20/\text{pound)} + \text{gold} = \$18 \text{ (at } \$375/\text{oz)} = \underline{\$56/\text{ton}}$$

(Note: This has the same dollar value as .2 ounce/ton gold)

Total gross metal value:

$$\$56/\text{ton} \times 20 \text{ mil tons} = \underline{\$1 \text{ Billion}}$$

(Note: Same \$ value as a 20 mil. ton deposit at .2 oz/t gold)

(Note: Gross metal value is before mining, milling, transportation, and smelter charges)

10. Total Costs (Can \$):

The copper-gold zone from 280 m. to 600 m. depth could be mined by underground or by open-pit:

(i) Underground costs:

Pre-production costs:

Drive a 600 meter deep spiral decline at \$1,500/meter	\$3 mil
Underground development drifts and ore-passes	<u>\$3 mil</u>
Total pre-production costs	\$6 mil

Mining costs:	
Mining using low-cost sub-level or block-caving	\$20/ton
Milling using the existing mill facilities	<u>\$ 4/ton</u>
Total mining and milling costs	\$ 24/ton

(ii) Open Pit Costs:

Pre-production stripping to reduce the mining strip-ratio:
 1 year's stripping to cut the walls back and decrease
 the pit-wall slopes. Cost for 1 year's stripping..... \$20 mil

Mining costs:	
Mining by open-pit (including removing waste)	\$ 12/ton
Milling using the existing facilities	<u>\$ 4/ton</u>
Total mining and milling costs.....	\$16/ton

11. Smelter charges and payments:

Gross metal value/ton (from #3)	\$56/ton
Transportation and smelter charges	<u>\$14/ton</u>
Net smelter payments.....	\$42/ton

12. Gross operating profits (before overhead and taxes):

Underground option:

Net smelter payments	\$42/ton
Costs/ton	<u>\$24/ton</u>
Gross underground profit....	\$18/ton

Open-pit option:

Net smelter payments	\$42/ton
Costs/ton	<u>\$16/ton</u>
Gross open-pit profit.....	\$26/ton

13. Profit margins for underground and open-pit options:

Underground profit margin: $\$18/\$42 = \underline{43\%}$
 Open-pit profit margin: $\$26/\$42 = \underline{60\%}$

14. Operating profit for life of the mine:

Underground option:	13 mil tons X \$18/ton =	<u>\$234 mil.</u>
Open-pit option:	13 mil tons X \$26/ton =	<u>\$338 mil.</u>

References:

Afton: A Supergene Deposit. By J.M Carr and J. Reed. In Porphyry Deposits of the Canadian Cordillera. Special Volume 15-1976. Page 376-387.

Afton, Afton Mine, Pothook. In B.C. Government Minfile Report number 92-I-NE, number 23. Page 32-38.

Diamond Drilling Report on the Pothook Zone. By Lorne Bond, Senior Geologist, Afton Operating Corp. Dec., '86. B.C. Energy and Mines Assessment Report 15713.

Geology of the Pothook Alkalic Copper-Gold Porphyry Deposit. By Clifford Stanley, Mineral Deposit Research Unit, U.B.C. In Geological Fieldwork 1993, Paper 1994-1, page 275-283.

Personal Communication with former and current Teck Corp. Geologists

Personal Communication with B.C. Mines Ministry Geologists Mike Cathro and Bruce Madu based in Kamloops. Kamloops office phone 1-250-828-4566.

SCHEDULE "A"

POT CLAIMS (32 Units)

<u>Claim Name</u>	<u>Record Number</u>
Pot 2 – 26 (inclusive)	36914 – 369638 (inclusive)
Pot 27 – 30 (inclusive)	370041 – 370044 (inclusive)
Pot 31	677219 (tag number)
Pot 32	234472 (tag number)

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Signed: -----
John Ball, Geologist

Date: -----

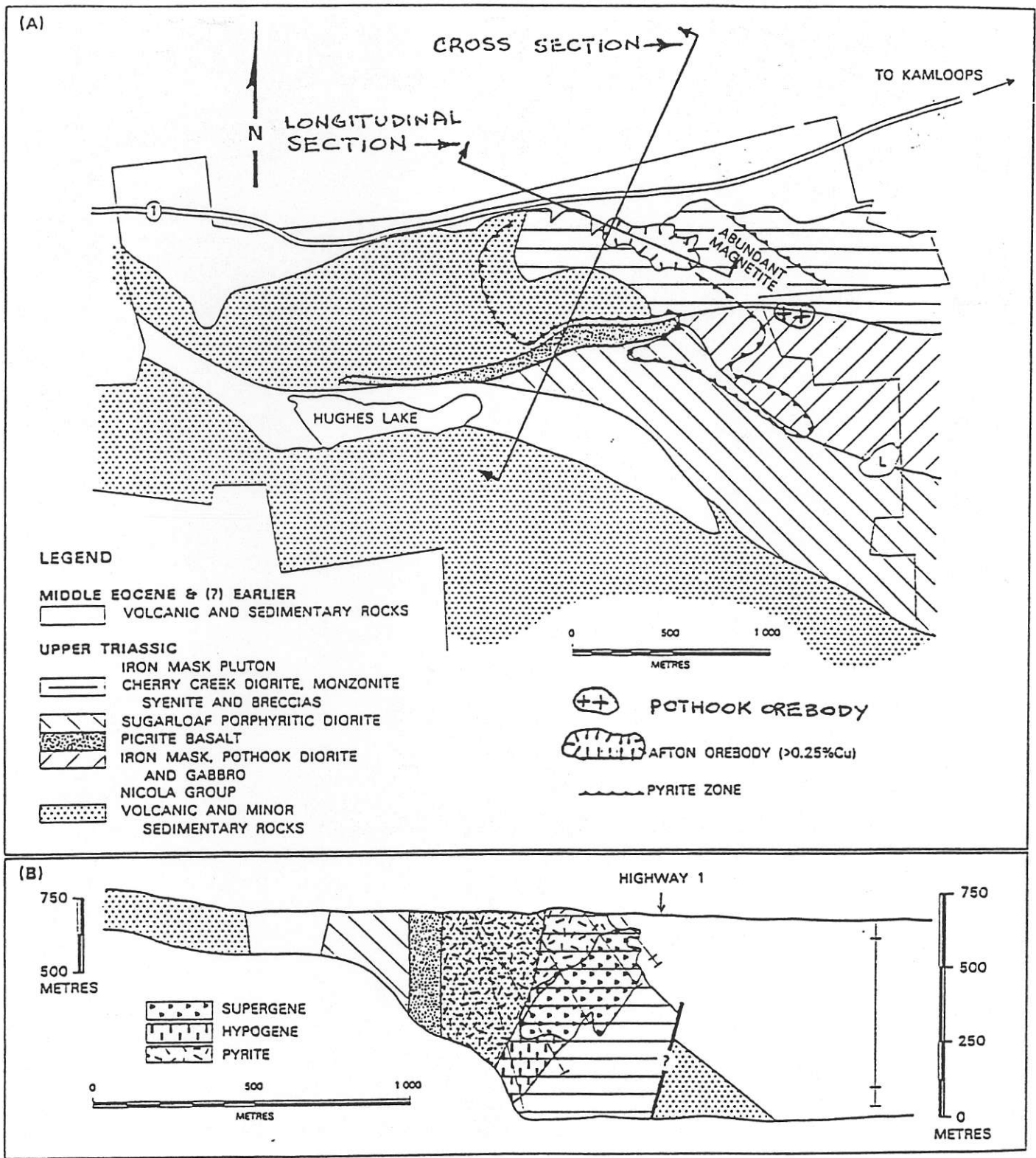


Figure 3. A geological map (A) and geological section (B) of the Afton property (after Carr and Reed, 1976).

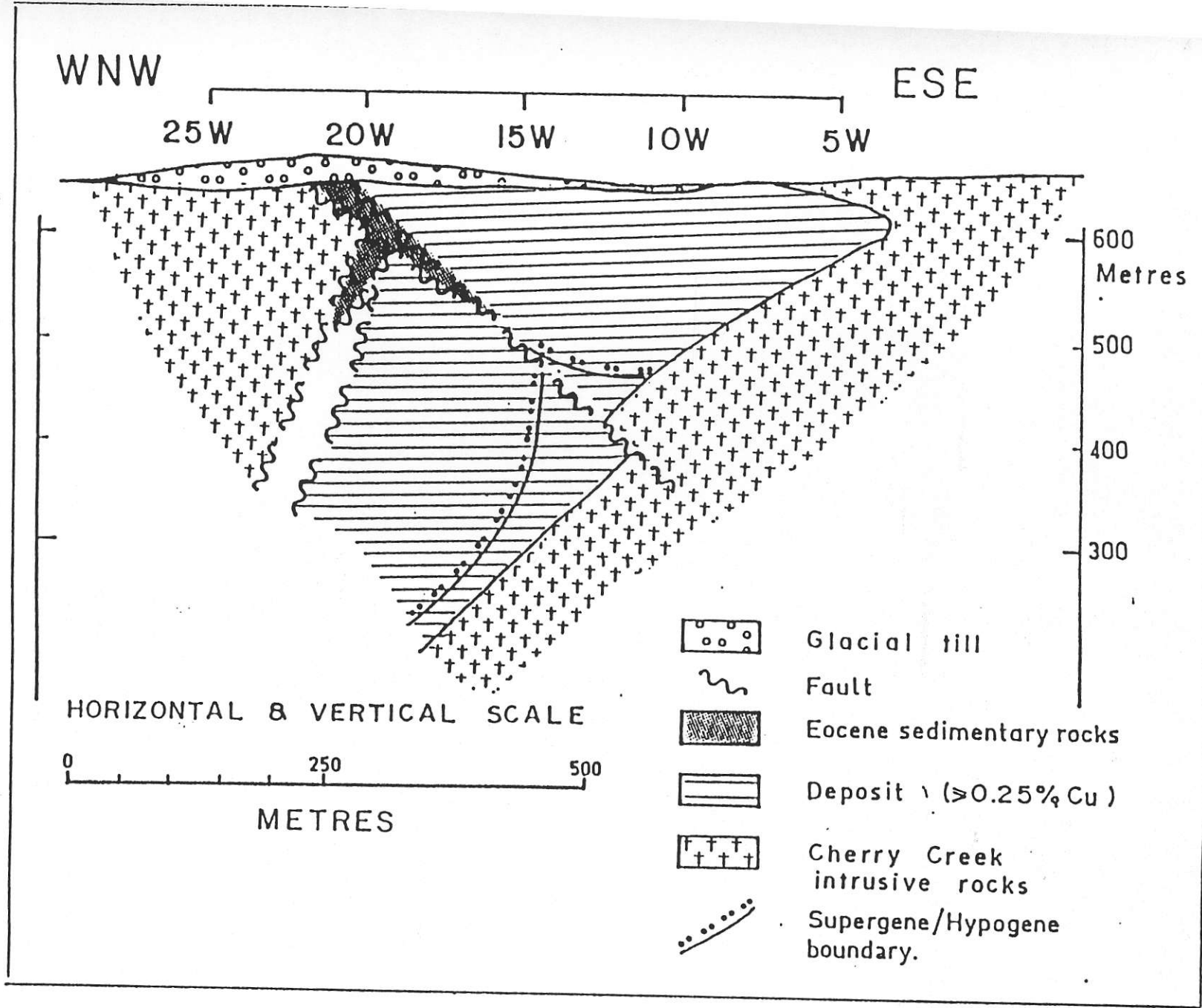
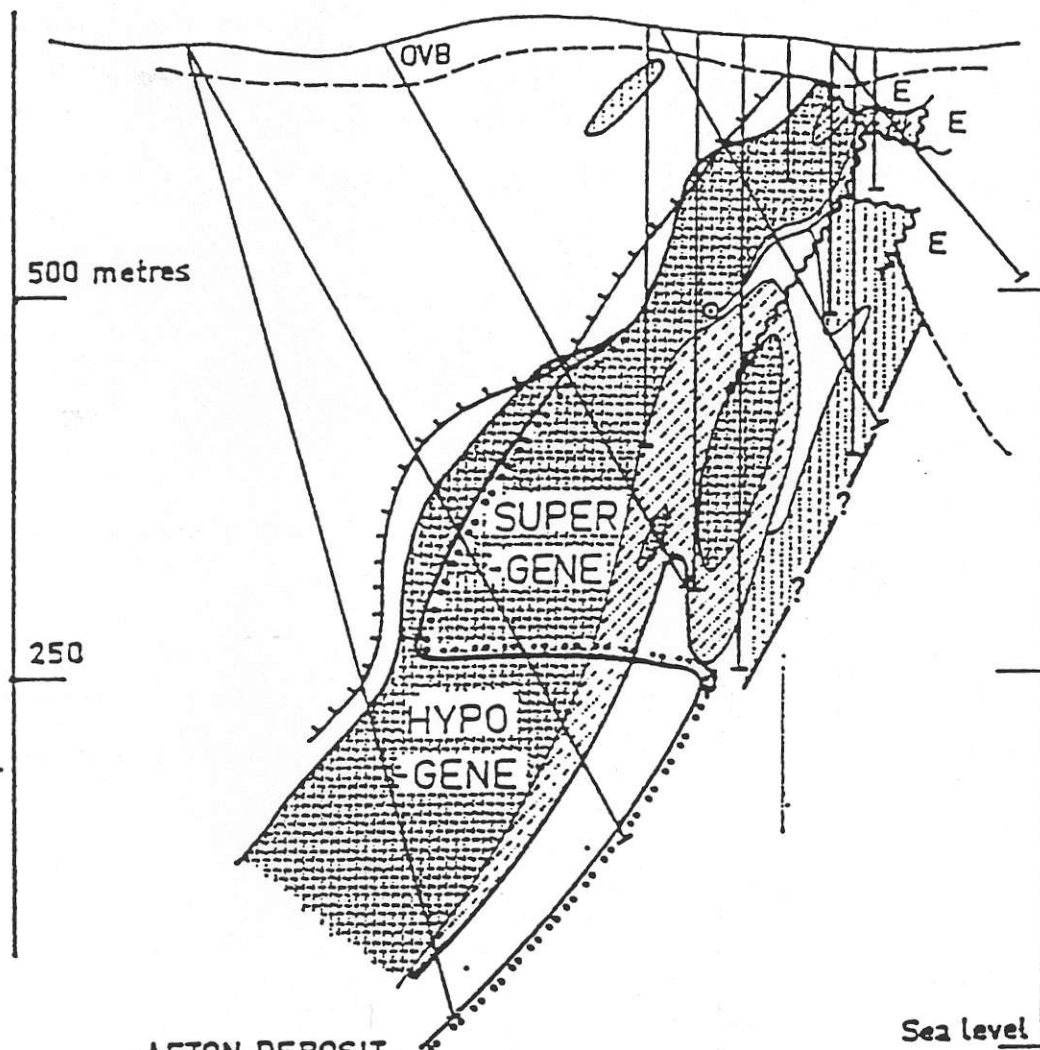


FIGURE 5 — Simplified vertical longitudinal slice of the Afton deposit.

SSW REFERENCE LINE 'G' NNE



AFTON DEPOSIT

- $\geq 1.0\% \text{ Cu}$
- $0.5 - 0.99\% \text{ Cu}$
- $0.25 - 0.49\% \text{ Cu}$
- Supergene/Hypogene boundary
- North limit of pyrite
- Drill hole piercing point
- Fault

HORIZONTAL AND VERTICAL SCALE
 0 50 100 200 300
 metres

(b)

(a) geology; (b) mineralization.

Photo 1 (Left)

Looking east towards the 280 metre deep Afton Pit with 45° pit walls and 10 mining benches. The mill and smelter buildings are in the distance.

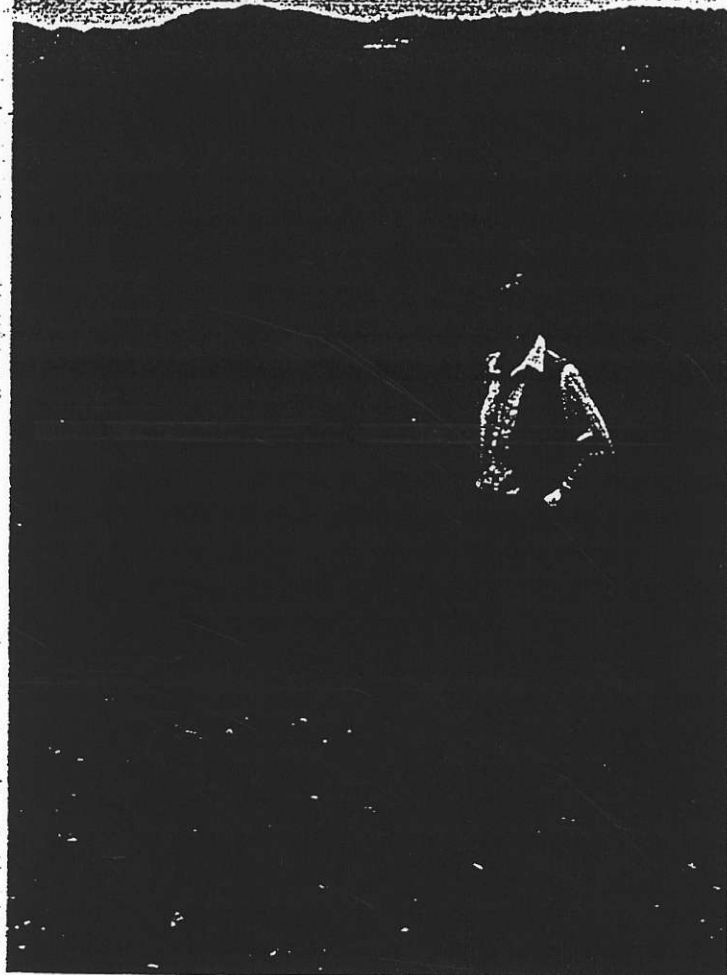


Photo 2 (Below)

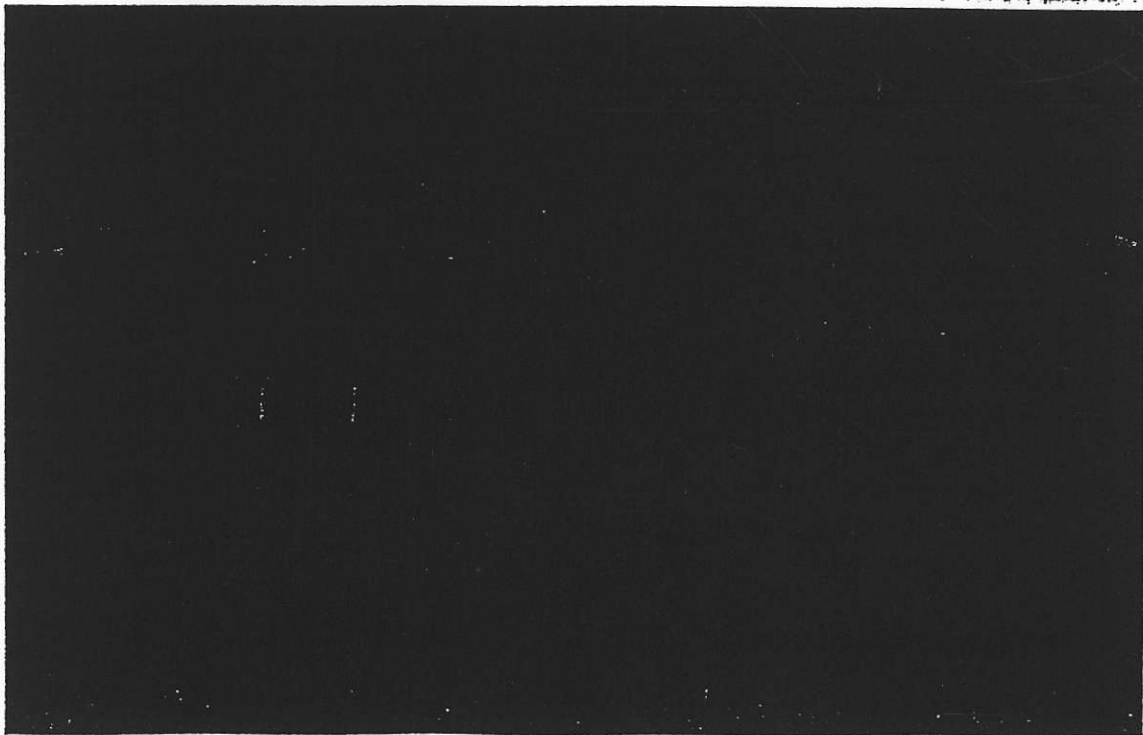
Looking west towards the Afton pit walls.



Photo 3 (Below)
Looking north across the
Pothook Pit towards the Afton
mill building and highway in
distance.



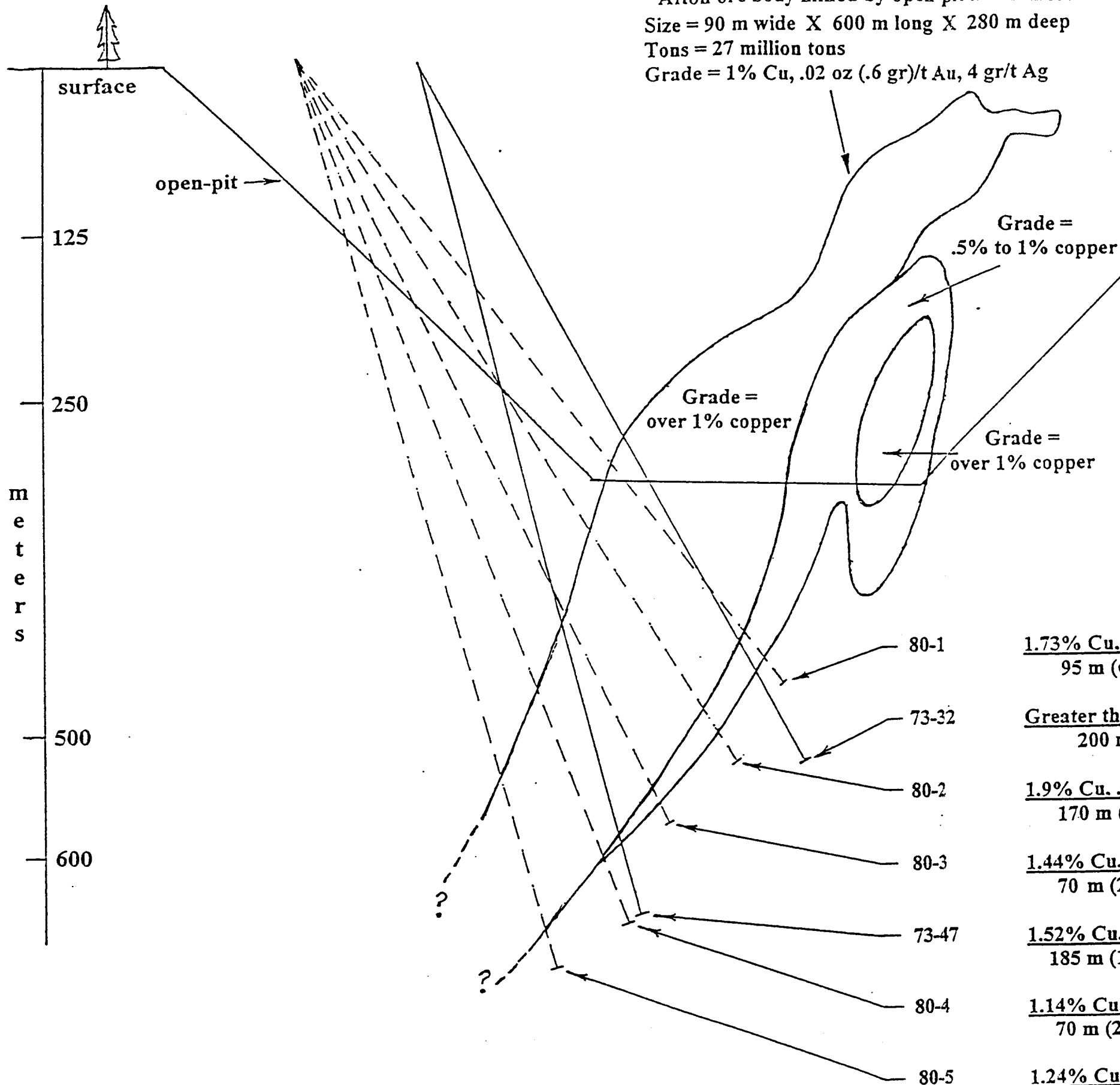
Photo 4 (Below):
Looking north-east towards the
truck maintenance shop on
right and mill on left.



south south-west

north north-east

Afton ore body mined by open-pit and milled:
Size = 90 m wide X 600 m long X 280 m deep
Tons = 27 million tons
Grade = 1% Cu, .02 oz (.6 gr)/t Au, 4 gr/t Ag



Cross Section of Afton Mineral Zone Beneath Open Pit
Average size and grade of ore zone and contained metals

Grade: 1.55% copper, .047 ounce/ton (1.5 grams) gold, .12 oz/t silver
 Size: 80 m thick X 300 m deep X 200 m long
 (the length could be 300 m or longer as the 7 drill holes have only tested a small portion of the zone)
 Tonnage: 13 mil tons (20 mil tons if future drilling proves 300 m length)
 Contained Cu: 400 mil pounds (increases to 600 mil pounds if 20 m. tons)
 Contained Au: 550,000 ounces (increases to 800,000 ounces if 20 mil tons)

(References: Afton mines drill results and maps. Government reports that use Afton drill data. Cross-section copied from Afton Mines section.)

80-1	<u>1.73% Cu, .018 oz (.55 gr)/t Au</u> 95 m (62 m true width)
73-32	<u>Greater than 1% Cu (actual assays unreported)</u> 200 m (150 m true width)
80-2	<u>1.9% Cu, .02 oz (.6 gm)/t Au</u> 170 m (80 m true width)
80-3	<u>1.44% Cu, .035 oz (1gr)/t Au</u> 70 m (25 m true width)
73-47	<u>1.52% Cu, gold not reported</u> 185 m (140 m true width)
80-4	<u>1.14% Cu, .107 oz (3 gm)/t Au</u> 70 m (25 m true width)
80-5	<u>1.24% Cu, .048 oz (1.5 gm)/t Au</u> 55 m (15 m true width)

Drill holes 80-1 to 80-5 have been projected onto this cross-section from a different section so the widths are slightly different from holes 73-32 and 73-47

Drawn by: J. Ball - Geologist
Date: Sept. 14, 1999