

# Whitehorse Copper Mines Ltd.

P.O. Box 4280, Whitehorse, Yukon Territory, Canada  
 telephone (403) 668-2171, Telex 049-8218

## MEMORANDUM

Date: October 9th, 1980

TO: D. Linzey  
 FROM: D. Tenney  
 RE: GEM OPEN PIT - CURRENT STATUS

The open pit mining potential of the Gem deposit is not considered very attractive for reasons which have been discussed at length in the past viz.

1. Narrow zones of mineralization.
2. Numerous large dykes transecting mineralization.
3. Low dip of about 30 degrees.
4. Top three benches (75 feet) of potential pit are oxidized and mill recoveries are poor.
5. Poor rock conditions inside pit with much faulting.
6. The above (1,2,3,5) necessitate a very high allowance for dilution.

Nevertheless, the high prices for which gold and silver are selling may make this deposit economic to mine. In order to determine the gold content of the "ore" fifty random samples of mineralized diamond drill core have been sent for assay to determine their copper silver and gold content. The gold content of the deposit will then be estimated in the same way as for Cowley Park using a combination of linear regression and other statistical techniques.

The question of what dilution should be expected at Gem is a difficult one to answer. The average for all the open pits mined in 1967 to 1971 was 34%. Gem will certainly be higher than this, and an estimate in the range 50-75% would not be unreasonable in my opinion. (Other opinions should be sought on this subject). Gold grades (undiluted) in the range 0.02 oz/ton, and an average undiluted copper grade for the pit in excess on 1.0% could make the deposit marginally profitable to open pit, and we would have to contemplate doing further work to decide whether or not mining should be undertaken. The Gem has been diamond drilled mainly on 100 foot interval lines and a limited amount of diamond drilling may be needed to optimize the pit design if doing one is warranted. \$6,000.00 has been allocated in the 1981 development budget for sampling at Gem.

The following schedule is envisioned:

- |   |         |               |
|---|---------|---------------|
| 1. Assay 50 samples for Cu.,Au.,Ag.                                   | \$ 500  | October 1980  |
| 2. Assay and metallurgical test on bulk sample of diamond drill core. | \$3,000 | November 1980 |

- |   |             |               |
|---|-------------|---------------|
| 3. Regression line and statistical analysis of assay results to determine gold grade of mineralization. | \$ *        | November 1980 |
| 4. Preliminary appraisal of economic potential.   | \$ *        | January 1981  |
| 5. Preliminary pit design if warranted.   | \$5,000     | 1981          |
| 6. Reevaluation of economics.   | \$ *        | December 1981 |
| 7. Diamond drilling to optimize pit configuration if required.  | \$(50,000?) | 1982          |
| 8. Revised pit design and final economic evaluation.  | \$ *        | December 1982 |

*D. Tenney*

D. Tenney  
Oct. 9th/80

cc: P. Martin  
A. Hureau  
P. Daum  
J. Janssens  
R. Samuels  
P. Percival