

# FALCONBRIDGE NICKEL MINES LIMITED

INTER-OFFICE MEMORANDUM

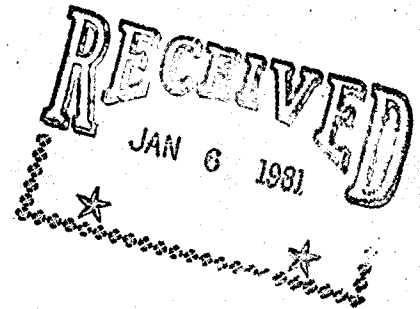
DATE: December 29, 1980

TO: W.A. Moore

COPIES TO: D.J. Emery, D. Zeraldo

FROM: P.J. Raleigh

SUBJECT: RECOVERY OF STORED ARSENIC DUST



The potential for selling additional volumes of arsenic trioxide to users in North America is indicated as being very favorable by the F.N.M. marketing department.

In order to be able to realize the financial potential accruing to Giant from the strong demand for the product which is very plentiful at your location, two avenues of endeavour in addition to the current sales position are open to you.

1. Recover stored material of recent origin (1975 to 1980) for direct sales to users or processors.
2. Recover stored material of ancient origin (1960 to 1975) for upgrading in a process yet to be decided upon. The upgraded material would yield a premium product and significant gold values.

In order to be in a position to do either of the alternatives, it is necessary to be able to recover the arsenic bearing dusts from the underground storage vaults.

The easiest areas for initial testing and equipment evaluation may be the currently active areas or areas of most recent activity. This would yield a salable commodity from the testwork if it were successful, and secondly the cost of the test would be minimal as piping into those areas may be in shape so that it can be used for at least the preliminary test operation.

The test program should be carried out as soon as possible so that the minimum amount of time is lost in providing information for the decisions on the next steps in the program.

If possible a program of testwork should be scheduled for late January after the vacuum tank returns from its refit. The first target appears to be the material which Kent Morton reports as being overfill in the recently completed storage stope. To recover the material the area should be connected with 8" pipes from near the pile to the nearest point on surface where the vacuum truck can be parked for operation. The truck should be capable of being emptied either into an air conveying line, for delivery back to the current storage stope or fed back to the bag houses for eventual disposal to the operating storage stope.

It is assumed that the shipping silo will not be ready to receive material during the test.

The pipe line proposed to carry the dust and air from the pick-up point should be checked to ensure that there are as few leaks as possible. Personnel familiar with the operation of the Supersucker truck should be available to operate the unit during the test period which should be less than one day.

We have calculated that with an 8" line 500' long and with 200' of lift the Supersucker can lift 14 tons per hour of material using 230 HP in an air stream carrying 1# of material for 5 cu.ft. of air moved.

The pick-up pipe which will be used to introduce the dust into the air stream should be similar to the one discussed with Ken Cogan during his visit to Giant in October. The unit discussed is a double walled pipe connected to the vacuum line with a flexible non-collapsing hose. The pick-up unit should have a 6" inner pipe surrounded by a 8" outer pipe the outer pipe should be 2" longer than the inner unit. The vacuum should be controllable by means of a variable opening at the top of the larger pipe (see Sketch).

The pipes should be made of light weight material so as it can be handled easily.

The first attempt to vacuum material can be made by controlling the vacuum pipe by hand or by lowering the unit into a pile from above by ropes. If unconsolidated material is available substantial volumes can be moved quickly if consolidated by ice crystals a cutting unit will be required. Assistance in this area will be available from Koppers if requested.

The test will not involve either a large amount of new equipment nor will it involve more than 4 people. It should supply information for a more definitive program that can be planned for the period immediately after the test. Sufficient money was appropriated for the test at a directors meeting some time ago. Economic analysis were run on the four basic development routes that appear to be available to Giant for additional arsenic sales and a summary of the results are attached.

Case I is the direct shipping case as per the Kopper Contract for 3 or 7 years.

Case IA is the direct shipping case expanded by addition of underground newer material.

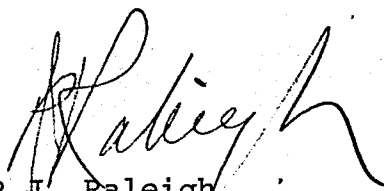
Case II covers assumptions on the purification of current production augmented by recovered material of recent origin to a total of 6000 T/year.

Case IIA covers assumptions on the purification of current production augmented by recovered material of ancient origin to a total of 6000 T/year.

Case III covers the case of current production combined with Con Pond Material for a total production of 6000 T/year from a fuming plant with gold from Con being shared 50/50.

Case IV covers the case of recovered ancient material being processed in a fuming plant with Con Pond Material to produce 6000 T/year gold from Con is share 50/50.

The results are impressive and work should be initiated immediately to allow for the program for recovery of material to be evaluated. Success will allow a move from Case I to Case IA with its improved net present value. Sales for the volumes proposed do not appear difficult to make at the moment.



P.J. Raleigh

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