

FALCONBRIDGE NICKEL MINES LIMITED

INTER-OFFICE MEMORANDUM

DATE: September 29, 1980

TO: H. T. Berry

COPIES TO: RAB, PGT, FGTP, JFJ, PGR, DJE
Giant Yellowknife: W. A. Moore, K. S. Morton

OCT - 2 1980

FROM: S. O. Fekete

SUBJECT: Trip to Giant Yellowknife Operations
Re: Arsenic Recovery Program

Giant Yellowknife Mines Ltd. was visited by the writer, accompanied by F. G. T. Pickard on September 24 and 25. The prime purpose of the visit was to take part in a meeting with Cominco personnel regarding the status of Giant's arsenic recovery program and the extent to which the treatment of the Con mine pond sludge might be included in Giant's plans.

The meeting with the Cominco personnel took place on the morning of the 24th of September with the following personnel attending:

Cominco:	Leonard P. Stephenson - Senior Concentrator Engineer
	Jim R. Greenhalgh - Manager Con Operations
	Walter J. Kuit - Senior Research Chemist
	Dave Whittall ?
Giant:	W. P. Moore
	K. S. Morton
	L. J. Connell
FNM:	F. G. T. Pickard
	S. O. Fekete

Cominco's position was outlined by J. R. Greenhalgh and L. P. Stephenson as follows:

- 1) The Con mine has accumulated over the years an estimated 47,000 dry tons of arsenic bearing material, containing about 65% As_2O_3 and 0.4 oz/ton gold (dry basis). The material is stored in two ponds and represent a source of pollution which needs to be resolved in the long term to the satisfaction of the Water Board.
- 2) The Con mine is under obligation to deal with the matter under the following time constraints:
 - a) File plans as to the method of handling the material to render it harmless by June 1, 1982, which has to be approved by the Water Board.
 - b) If the Con mine elects to remove the material they would have 10 years following the date of approval to do so.
- 3) Cominco's preference would be to remove the material from the ponds for treatment in a Giant plant since this would minimize their future risk. However, they would require assurance that Giant's plans are viable and would also satisfy the Water Board.

- 4) The importance of the Cominco's time constraint was emphasized. Incorporating the Con pond sludge in Giant's treatment scheme can only be viable if plans for such treatment are completed and submitted to the Water Board by June 1, 1982, and Board approval will be granted.

The status of Giant's activities with respect to arsenic recovery was summarized as follows:

- 1) Water leaching of baghouse dust and the Con sludge was piloted. While the scheme worked, capital and operating costs were estimated to be high, making the approach economically doubtful.
- 2) Fuming is currently favoured due to lower estimated capital and operating costs. Test work underway at FML is directed towards obtaining a preliminary assessment as to the technical viability of the fuming approach. It was estimated that in one to two weeks time the laboratory work will have progressed to the point of determining whether or not obstacles exist that would rule out fuming.
- 3) If upon completion of the laboratory work, fuming appears to be a reasonable approach Giant would undertake pilot plant work to develop engineering design data.
- 4) While water leaching may be less attractive economically, it is still considered to be a standby approach which can be adopted in case insurmountable technical difficulties are met with fuming.

A plan of action was outlined as follows:

- 1) Complete the laboratory work and decide whether or not the fuming approach deserves further piloting. If so, the cost of the program will be estimated and authorization will be sought to design, construct and operate a pilot plant to develop the necessary engineering design data.
- 2) The pilot plant would have to be located at the plant site in Yellowknife. It was not considered to be possible to carry out piloting at other locations due to the potential delays in obtaining permits from regulatory agencies.
- 3) There is a risk that the Con mine may become strike bound. For that reason some 30 to 40 drums of Con pond sludge will be collected now and stored on Giant property, so that it will be available when needed. A supply of baghouse dust will also be needed, which hopefully would be available from production if the plant is in operation. Otherwise the initial phases of the development will be carried out with Con pond sludge augmented, if possible, with baghouse dust recovered from underground storage.
- 4) Giant will re-examine the economics of the water leach process and update it.
- 5) A proposal for the commercial terms of treating the Con pond sludge will be prepared by Giant and used as a basis for initial discussions with Cominco. It is expected that this proposal would be ready within a month's time.