

## FALCONBRIDGE NICKEL MINES LIMITED

INTER-OFFICE MEMORANDUM

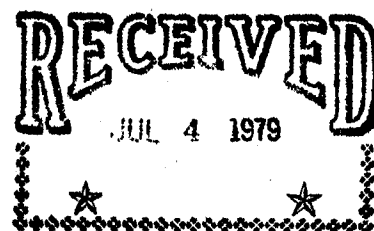
DATE: June 26, 1979

TO: R.A. Bergman

COPIES TO: HTB/PGT, PJR/LSP, DSE

FROM: H.T. Evans

SUBJECT: LEACHING OF ARSENIC TRIOXIDE - GIANT YELLOWKNIFE



With reference to the captioned subject, a review of solubility data quoted by Seidel-Linke prompts the inquiry whether the presence of a limited quantity of arsenious acid ( $\text{H}_3\text{AsO}_4$ ) might not be beneficial in the recovery circuit proposed for Giant Yellowknife. The data quoted by Linke is as follows:

<u>T°C</u>	<u>H<sub>2</sub>O (a)</u>	<u>H<sub>3</sub>AsO<sub>4</sub>(b)</u>
15	1.66	
25	2.05	1.62
60		3.50
62	4.45	
98.5	8.18	
98/99		8.45

Note (a) Grams  $\text{As}_2\text{O}_3$  per 100 grams  $\text{H}_2\text{O}$

(b) Grams  $\text{As}_2\text{O}_3$  per 100 grams of solution having  
1M  $\text{H}_3\text{AsO}_4$ /litre

If the above solubilities are accepted at face value, the differential between 25 and 98.5° is 6.83 grams in the case of 1M  $\text{H}_3\text{AsO}_4$  versus 6.13 grams in the case of water. There is no data available on concentrations of  $\text{H}_3\text{AsO}_4$  less than 1 molecule per litre and it is in this area that interest might be centred to determine whether there is (a) greater solubility of  $\text{As}_2\text{O}_3$  at elevated temperature, and (b) improved differential solubility over a temperature range.

A copy of Linke's summary is attached for ready reference.

HTE:ld  
Att.

*H. T. Evans*  
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