

# MEMORANDUM

To ..... H.E. Pawson; M.E. Lane; File

Date..... March 23, 1972

From ..... W.L. Richardson

Ref. ....

Subject..... EXPERIMENT TO REDUCE THE CYANIDE AND ARSENIC LEVELS IN BARREN SOLN.

It was found that continuing on with experiments first performed by M.E. Lane which involved the mixing of Barren Solution with the Dorrco Wash Thickener Overflow Solution, a further reduction in cyanide as well as a far greater reduction in arsenic could be obtained by the addition of iron and lime after the two solutions were mixed.

	<u>pH</u>	<u>CN</u>	<u>As</u>
Barren Solution	10.9	440 ppm.	2.6 ppm.
DWTO	6.1	6 ppm.	91.2 ppm.
450 ml. DWTO into 200 ml Barren	6.6	64 ppm.	44.0 ppm.
The above mixture + 100mgr. Fe + 0.5 gr. CaO	5.5	43 ppm.	8.6 ppm.
500ml. DWTO into 200ml. Barren	5.8	77 ppm.	49.2 ppm.
The above mixture + 200mgr. Fe + 1 gr. CaO	5.8	43 ppm.	9.6 ppm.

In conclusion, it can be seen that on mixing the two solutions, the cyanide was reduced by 85.45% and the arsenic by 46.05%. However, with the addition of iron and lime after the initial mixing, the cyanide was reduced by 90.23% and the arsenic by 89.47%.

It is noted that the additional iron or lime does not serve any purpose.

*W.L. Richardson*  
W.L. Richardson  
Mill Chemist

WLR/mw