

To M.K. Pickard

Date January 7th, 1963

From E.O. Foster

Ref.

Subject Arsenic Content of Water Samples from this District

Possible sources of arsenic in water in this district are:

- (a) Natural ground waters which have come in contact with deposits of arsenopyrite, FeAsS .
- (b) Arsenous Oxide, As_2O_3 , a product of the roasting of arsenical ores and concentrate.

Arsenous Oxide, As_2O_3 , is slightly soluble in water (1.2 parts per hundred at 2°C , and 2.93 parts per hundred at 100°C) with which it forms arsenous acid. The Arsenous Oxide produced locally is not pure, being contaminated with iron oxides, sulphates, and minor quantities of other compounds. Any sulphates present will tend to increase the solubility of the arsenic.

Another source of soluble arsenic is available from decomposition products of arsenopyrite which enter the mill leaching circuits, and come in contact with strong alkali solutions. Solutions of alkali arsenites are formed here.

It is therefore reasonable to assume the composition of the arsenic content in samples of water from this district would be very dilute solutions of arsenous acid, and/or sodium arsenate.

Note:

I am preparing a strong solution of water soluble arsenic by leaching crude arsenic (baghouse dust) with distilled water. This should represent an arsenous acid solution.


E.O. Foster

Component Parts of Mill Solution to Bow Lake

		<u>June</u>	<u>Sept</u>	
Barren Bleed (Calcine Circuit)			14.39 ppm	25.6
Final Barren	900 t.p.d.		11.19 ppm	20.14
Calcine W.T.O.	390 t.p.d.		111.00 ppm	85 ✓
D.T. Barren	26 t.p.d.	407.00 ppm	676.00 ppm	35
Kahn Scrubber Sol'n	125 t.p.d.	397.00 ppm	128.00 ppm	32
HCD Storage Thiele				101.4 ✓
O' Filter, —	250 t.p.d.	1223 ppm 1221.80 11m		