Property File

082FNW004

MEMORANDUM

001967

September 27, 1946.

To R. Crowe-Swords

From C. C. Starr

Subject: TIN

The following notes are from an article by Banks on C. M. & S. tin recovery at Kimberley in 1941, published in Can. Inst. M. & M.

The tin is 90% cassiterite and 10% stannite; the maximum size grains is 200 mesh.

Floatation of the tin was not successful, and the concentration is made from Zinc Rougher tailings by first floating out the iron minerals (60%) and gravity concentration of tailing remaining.

Zinc Rougher tailings contain 1.0 to 1.5 lbs. ~~per~~ of tin per ton, and overall recovery is about 45%.

Cost not given. Final concentrate is about 2000 to One and runs about 65% tin.

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Comment Cassiterite has a Sp. Gr. of 6.8 to 7.1 while Sphalerite Sp. Gr. is 3.9 to 4.1 so it might be that Bosun zinc concentrate could be made more acceptable to Anaconda Smelter by putting it over a table and taking out a percentage of the tin.

Also, if a lead flotation concentrate were made from the original ore it should tend to reduce the antimony in the zinc concentrate, since the gray-copper (probably the source of the antimony) would tend to float with the lead, rather than with the zinc, which in turn should tend to increase the silver in the lead and decrease that in the zinc.

Williams should have around 30 lbs of zinc ore from my last sampling of the floor of west 7 level in the Beann, and this is as good a sample as anything that I could get there, so I do not see the need of resampling.

The only possible hope I can see of your tin giving any profit would be through the C. M. & S. Co. milling it themselves, or your developing a sufficient tonnage to justify a mill of your own.

In Anaconda Conc (0.3% tin) J R Williams suggests too much Copper sulphate activator was used & that it should be possible to get very little tin in Zn Conc. especly if tin is cassiterite.

Too much Cu sulph might float tin.