



## DEPARTMENT OF MINES—TASMANIA

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COMALCO LTD - MOINA WRIGGLITE.R745Introduction:

This investigation extends the work of report R731 in an examination of a sample of wriggilite ore (761736) selected from surface dumps of the Shepherd and Murphy Mine at Moina. This investigation deals essentially with the concentration and recovery of scheelite only. The situation of minerals such as fluorite, magnetite and cassiterite, at the end of the scheelite concentration process, is however, defined.

Aim:

To concentrate the scheelite present in the wriggilite.

Method:

Successive grinding and concentration techniques were used to reduce a sample bulk of 95 Kg to a final particle size of - 53  $\mu\text{m}$ .

An outline of the concentration process (see flowsheet) used is as follows. The ore was initially ball mill ground to - 300  $\mu\text{m}$ , producing the fractions + 170  $\mu\text{m}$ , + 76  $\mu\text{m}$ , + 53  $\mu\text{m}$  and - 53  $\mu\text{m}$ . The + 170  $\mu\text{m}$  fraction was then subjected to magnetic separation on an Eriez drum type wet magnetic separator. The resulting non-magnetic fraction was then gravity concentrated on a laboratory Deister table and the concentrate produced was subjected to sulphide flotation. The flotation tailing was then dried and fed to a Rapid high intensity dry magnetic separator. This total process was repeated for each sized fraction together with its appropriately sized and reground table tailing and Eriez magnetics. Thus by successive stages, the ore was concentrated at the following particle sizes.

Primary section	-300 $\mu\text{m}$ + 170 $\mu\text{m}$
Secondary section	-170 $\mu\text{m}$ + 75 $\mu\text{m}$
Tertiary section	- 75 $\mu\text{m}$ + 53 $\mu\text{m}$
Quaternary section	- 53 $\mu\text{m}$