

APPENDIX C

MINERALOGY OF BULK SULPHIDE CONCENTRATES

G1. INTRODUCTION

Four sulphide concentrate samples produced by bulk sulphide flotation were submitted for mineralogical analysis to obtain the following information:

- (1) approximate mineralogical composition
- (2) particle size for liberation of locked cassiterite from sulphides
- (3) grain size of any economic minerals, and
- (4) photomicrographs of typical mineral textures.

The following analytical data were supplied:

Sample	Total % Sn	Acid-soluble Sn %	Total S %	Fe %
PC1/BF Sulphide Recl Conc	0.35	0.27	45.3	41.2
PC2/BF Sulphide Recl Conc	0.24	0.16	50.0	43.4
SC1/BF Sulphide Ro Conc	0.5	0.13	37.0	49.1
SC2/BF Sulphide Ro Conc	0.385	0.05	11.1	13.7

G2. PROCEDURE

All samples, except for SC2/BF, were seen to consist of sulphides but Sample SC2/BF contains a high proportion of light gangue minerals. It was therefore decided to treat Sample SC2/BF in a different manner from the other three samples.

For Samples PC1/BF, PC2/BF and SC1/BF polished briquettes (PS22460-2) were made and examined in reflected light to estimate visually their mineralogy, grain size and locking characteristics of minerals of interest.

The bulk mineralogy of Sample SC2/BF was determined by X-ray diffraction analysis of a finely powered sub-sample. A portion of Sample SC2/BF was deslimed at nominally 10 μm by sedimentation and the +10 μm fraction separated in methylene iodide (sp.gr. = 3.3) to concentrate sulphides and tin minerals into the heavy product. Both density products and the -10 μm slimes were assayed for tin and the tin distribution between these products calculated.