

## B3. TIN DISTRIBUTION IN SIZED HEAVY LIQUID PRODUCTS

The distribution of tin between the various heavy liquid products of all four samples is given in Tables B1 to B4. The tin in the two lighter products would represent tin in tin minerals which are locked with other gangue minerals to produce composite grains with a lighter specific gravity. The proportion of tin in the >4.0 sp.gr. products would represent tin occurring both as liberated tin minerals and as tin minerals locked with either other dense gangue minerals or with lighter gangue minerals such that the composite grains still have a high specific gravity.

The calculated head assays agree very well with the head assays, the maximum difference between the two assays of any sample being less than 5%.

## B4. MINERALOGY

The mineralogy of these samples is summarised in Table B5, from which it can be seen that the two porphyry composite samples have a similar bulk mineralogy, consisting mainly of quartz and topaz with minor to accessory pyrite and iron oxides. Both fluorite and muscovite were noted in the PC1 but were not observed in PC2.

The two sulphide composite samples have a somewhat more variable mineralogy with SC1 consisting mainly of pyrrhotite with a smaller amount of sellaite and minor muscovite, dolomite, siderite and quartz. SC2 consists mainly of carbonates (magnesite and dolomite with minor siderite) along with talc and pyrrhotite. Pyrite is present in all samples, as are traces of other sulphides including chalcopyrite, sphalerite and other base metal sulphides.

In all samples the major tin mineral is cassiterite, although the porphyry composite samples have a small amount of stannite. Traces of franckeite were also noted in PC2 and the SC2 samples, as were traces of stannite in the SC2 sample. Except for the PC1 and PC2 samples, in which stannite contains approximately 2% of the tin, the stannite and franckeite in the samples make a negligible contribution to the total tin content. For the porphyry composite samples the quantitatively determined tin mineralogy as well as the proportions of tin in cassiterite and stannite are given in Table B6. The mineralogically determined proportion of tin and stannite is significantly lower than the proportion of acid soluble tin determined chemically and this discrepancy is difficult to reconcile. It should be stressed that both the mineralogical and chemical determinations of acid soluble tin gave relatively low values.