

- Test SC1/F1 - Standard test using PTAA as collector
- Test SC1/F2 - Standard test with sulphide cleaner float
- Test SC1/F3 - Deslimed flotation feed using PTAA as collector
- Test SC1/F4 - Deslimed flotation feed using SPA as collector
- Test SC1/F5 - Deslimed flotation feed using S-3903 as collector
- Test SC1/F6 - Up-grade tin flotation rougher concentrate  
(flotation feed 100% -75  $\mu$ m) by superpanning
- Test SC2/F1 - Standard test using PTAA as collector and with  
talc pre-float
- Test SC2/F2 - Deslimed flotation feed using PTAA as collector
- Test SC2/F3 - Deslimed flotation feed using SPA as collector
- Test SC2/F4 - Deslimed flotation feed using S-3903 as collector

Details of these flotation tests and results together with relevant comments made in each test are presented in Appendix E.

## 6.2 Discussion

### 6.2.1 Composite PC1

The average tin losses were about 3% in the -7  $\mu$ m slime fraction of Tests PC1/F1 to F3 with a feed grind size of 100% -75  $\mu$ m. Desliming at about 7  $\mu$ m appeared to be acceptable for a minimal tin loss.

In the same three tests, the tin which reported in the sulphide rougher concentrate averaged about 9% which was higher than that of about 3 to 4% for the same product obtained for Ore Sample No. 1 previously. Cleaner flotation may reduce the tin losses in the sulphide product but the effect would depend on the proportion of cassiterite to stannite and their association with the other sulphide minerals present in PC1.

The plot of cumulative grade and recovery versus flotation time for Tests PC1/F1 to F3 as shown in Fig. 1 revealed that collector SPA gave the best tin flotation performance under the conditions used. A close to ten-fold concentration ratio (from 0.24 to 2.34% Sn) at 84.8% recovery was obtained in the tin flotation rougher concentrate for Test PC1/F2 using SPA as collector.

### 6.2.2 Composite PC2

Tests PC2/F1 and F2 showed very little difference in flotation performance when the new and old stock of PTAA was used as tin collector.

In the study of tin collector PTAA, results obtained in Tests PC2/F2 to F7 showed that a long flotation time was required for high recovery both in the case of fine (-75  $\mu$ m) and coarse (-150  $\mu$ m) feed grind. However, the flotation time was reduced considerably for a fine feed grind when