

6. ORE RESERVE EVALUATION

- 6.1 Previous surface investigations outlined an alluvial area of 2.5 - 2.7 mil sq m with depths of 2.5 - 2.9m within the prospect, giving a volume of 6.25 to 7.83 mil cu m. The latest pit sampling indicated alluvium depths varying between 1.5 and 3.5 m and averaging 2.5m (The pit at 420m along Track 1 was unbottomed in alluvium at 3.5m depth!) On the basis of the latter depth finding and an average alluvial area of 2.6 mil sq m, the volume estimate for the deposit would be acceptable at 6.5 mil cu m.
- 6.2 The indicated average grade of the alluvium is 215g per cu m as calculated from the pit sampling and Analabs results. The tonnage of the cassiterite concentrates at 70% Sn in the 6.5 mil cu m therefore is 1400 tonnes.
- 6.3 In the Arthur River Alluvials Prospect a stretch covering the Arthur River and its immediate vicinity was issued as a mining tenement under lease 42M/77 and granted to Arthur River Mining Ltd. under an agreement with Comstaff. The former company has already commenced mining development and installation of ore treatment plant. The reserves in the lease are estimated at 340 tonnes in 1.3 mil cu m grading 261 g per cu m which is calculated from the influence of the results of the three pits nearest to the lease on plan (i.e. Pit 460 m on Track 1 and Pits 460m and 511 on Track 2). A substantial portion of the reserves underlie the present flowing river and are irrecoverable unless the latter has been deviated. However, all those extractable reserves outside of the river are likely to be completely mined out by Arthur River Mining before the lease expires on 29th March 1982.
- 6.4 During the start-up of a mining operation an adequate area has to be set aside for retaining the tailings/-slimes discharged from the ore treatment plant. As the surrounding topography is of hilly terrain unsuitable for retention purposes, approximately 5,000 sq m of the flat plain initially will be required for tailings/-slimes disposal. The area is equivalent to a loss of 12,500 cu m and 2.7 tonnes which however are comparatively insignificant. Further it may not be necessary to utilise this area as there is a possibility that the lease worked out by Arthur River Mining could be available for disposal of the tailings/slimes.
- 6.5 As regards to the recoverability of the cassiterite in the reserves a metallurgical recovery of 90% is considered reasonable for a jig plant treating the free sandy ore and the cassiterite grains being dominantly coarser than 100 mesh BSS.