

These results show that effective liberation of fluorite from gangue minerals (particularly magnetite) occurs only at particle sizes of less than 33  $\mu$ m.

4.2 Assays and Distribution of Tungsten

The results of assaying the magnetic and specific gravity products are shown in Table A-2 (assays are expressed as the element, tungsten) and the following conclusions can be drawn from this table:

1. The calculated head assay is about 875 ppm.
2. In the plus 9  $\mu$ m size fractions, 64% of the tungsten reports into the >3.3 sp.gr. non-magnetic product and hence could be liberated. Almost 27% of the tungsten in the plus 9  $\mu$ m material is locked in the ferromagnetic product and only 10% reports in the two lighter products (<3.1 and 3.1-3.3 sp.gr.) and hence is locked with light gangue minerals or fluorite.
3. The assays of the ferromagnetic and <3.1 sp.gr. non-magnetic products decrease with decreasing particle size but the 3.1 to 3.3 sp.gr. non-magnetic product shows a less well-defined trend.
4. The tungsten assays of the >3.3 sp.gr. non-magnetic products (in which all the liberated tungsten minerals occur) increase with decreasing particle size from 1900 ppm in the plus 75  $\mu$ m fraction to 2700 ppm in the minus 17 plus 9  $\mu$ m fraction. Throughout the plus 9  $\mu$ m size range the distribution of tungsten into the >3.3 sp.gr. non-magnetic product varies between 60 and 68% only.
5. There is no preferential grinding of the tungsten minerals and the minus 9  $\mu$ m slimes contain 18% of the tungsten in the ore.

4.3 Assays and Distribution of Tin

Table A-3 shows the results of analysis of the magnetic and specific gravity products for tin; from this table the following conclusions can be drawn:

1. The calculated head assay is about 1200 ppm Sn.
2. Overall in the plus 9  $\mu$ m fractions only 43% of the tin reports into the >3.3 sp.gr. non-magnetic products, which contain all the liberated tin in the ground ore. Most of the locked tin in these size fractions occurs in the ferromagnetic product (33% of the tin) and 24% only occurs in the <3.3 sp.gr. products where