TR11-175-176 R. 525 PART 2

29. MT REX: EXAMINATION OF MILL PRODUCTS

Introduction

Following the receipt of the results of Test N-1 the Mt Rex treatment plant was modified. The products from this modified circuit were sampled during a visit to the plant by the Chief Chemist and Metallurgist.

Flowsheet

During Test N-4 the flowsheet was a jaw crusher, then rolls with the roll discharge being raised by a bucket elevator to a shaking screen from which the undersize passed to a table, while the oversize returned to the rolls.

Sizing and Tin Distribution in Plant Products—Test N-4

TABLE FEED

Fraction	*Per Cent*		
	Weight	*Tin*	*Tin Distribution*
+ 7	6.3	2.14	5.6
44	74.0	2.24	68.8
150	12.9	3.05	16.3
−150	6.8	3.29	9.3
	100.0	2.41	100.0

TABLE TAILING

Fraction	*Per Cent*		
	Weight	*Tin*	*Tin Distribution*
+ 7	9.1	1.02	10.7
44	80.4	0.83	76.8
150	7.2	0.20	1.6
−150 Pan. Con.	0.6	15.07	10.4
−150 Pan. Tail.	2.7	0.13	0.5
	100.0	0.87	100.0

SCREEN OVERSIZE

Fraction (Mesh B.S.)	*Per Cent Weight*
+ 5	13.1
7	50.4
10	29.5
−10	7.0
Screen O/S	100.0*

* Assaying 1.7 per cent tin.

Discussion

The screen was working efficiently, but the undersize product containing 80 per cent plus 44 mesh was too coarse for tabling but would make excellent jig feed if the minus 44 mesh material was removed.

The effect of the screen in eliminating overgrinding can be seen by comparing the table feed sizings of Tests N-1 and N-4 where it will be seen that the minus 150 mesh fraction contains much less tin even though the feed is much richer in tin.

The table tailing showed two things, namely:—

(*a*) that the plus 44 mesh material contains composite tin grains which require further grinding to liberate the tin; and

(*b*) that the tin is liberated in the minus 44 mesh fractions, but fine tin (minus 150 mesh) is being washed off the table due to the turbulence caused by the coarse particles in the feed. In the minus 150 mesh fractions this tin was panned off.

Recommendations

The present screen undersize should be rescreened on 44 mesh, the oversize being fed to a jig, the undersize being table feed.

The jig tailings should be rod milled then rescreened on 44 mesh.

The jig concentrate would need retreatment with grinding of these tailings in the same way as the other jig tailings.