

TR3-192-193

R. 333

ABERFOYLE TIN MINING CO., N.L.

Sample.

A 40 lb. sample of slimes recovered from coarse jig tailings during dewatering operations was received from the Aberfoyle Co. The sample contains cassiterite and wolfram in extremely fine sizes.

Assay values are:—

Tin	0.57%
Tungstic Oxide	0.49%
Tin by vanning assay	0.12%

Sizing Analysis:—

+ 200 mesh	13.3%
- 200 mesh	86.7%

The plus 200 mesh fraction was chiefly mica.

Investigation.

Concentration tests were desired to indicate possible recoveries in mill operation as separate tin and wolfram concentrates.

No responsibility is accepted for the results shown in this report except in so far as they apply to the sample tested.

Summary.

1. Tin and wolfram in the sample are totally finer than a 200 mesh screen, and the vanning assay for tin indicates that the majority of these minerals could not be concentrated by gravity methods.

2. Test treatment consisted of classification, tabling, sulphuric acid treatment of the concentrate to remove siderite and finest slime, drying of concentrate and separation on a rapid magnetic separator. Separation was extremely difficult due to the fine sizes.

The tin concentrate contained 35.3% of tin and 10.4% of tungstic oxide, and represented 0.37% by weight. Recovery of the tin and tungstic oxide in the tin product amounted to 24.1% and 8.4% respectively.

The wolfram concentrate amounted to 0.05% by weight with assays of 1.3% tin and 57% of tungstic oxide, and with recoveries of 0.1% and 6.2%.

Test Results.

Product	Wght.	Percent		Percent Distribution	
		Tin	WO ₃	Tin	WO ₃
Tin Concentrate	0.37	35.3	10.4	24.1	8.4
Wolfram Concentrate	0.05	1.3	57.0	0.1	6.2
Tin-Wolfram Residue	0.03	8.6	40.0	0.5	2.6
Table Tails	99.52	0.41	0.38	75.3	82.8
Solution Loss	0.03	N.D.	N.D.		
Composite	100.0	0.54	0.46	100.0	100.0