

TR6-196-197

R.375

## ABERFOYLE TIN MINING Co. N.L.

### WOLFRAM

#### Sample

A sample described as "Wolfram seconds ex acid vat and flotation" was received from the company with a request for investigation into the causes of the material nodulizing on drying.

The sample was in pulp form containing 88% solids. The pH of the pulp was 5.3.

#### Summary

The sample was examined for the presence of soluble salts, and was found to contain 0.30% of sulphate radicle, and 0.06% of ferrous iron.

A sizing analysis was made of the sample and the results appear below. A notable feature is the almost complete absence of slime material.

Observations were made of samples of the material dried as received, and dried after filtering and washing. A thin crust of cemented fine solids was noted in the former case, and was not apparent in the latter. The bulk of the material in either case appeared quite friable.

The dried solids from both tests were brushed through an 85 mesh B.S. screen. The washed material presented no difficulty in this respect, but some evidence of nodulising was observed in the unwashed sample, and screening was somewhat more difficult.

Magnetic separator tests were performed on the two samples after screening, and the test results follow below. The degree of contamination by tin of the magnetic concentrate is similar in each case, but a marked reduction takes place in the tungsten contamination of the non-magnetic product from the washed sample over the tungsten content of the same product from the unwashed material.

#### Assays

	Percent	
WO <sub>3</sub>		Sn
68.0		6.8

**Sizing**

Size—B.S.S.	Equivalent Cassiterite Size—Microns	Wght	Percent WO <sub>3</sub>	Sn	Percent Distribution	
					WO <sub>3</sub>	Sn
+ 60		1.2	68.0	6.6	1.2	1.3
+ 85		2.4	70.8	6.3	2.5	2.4
+ 100		2.2	69.0	5.0	2.2	1.8
+ 150		16.0	68.6	4.8	16.1	12.4
+ 200		18.4	68.4	6.4	18.4	18.9
Elutriation						
Fraction 1	+ 76 — 40	24.7	70.1	5.8	25.3	23.1
Elutriation						
Fraction 2	+ 40 — 28	29.4	68.0	7.0	29.2	33.1
Elutriation						
Fraction 3	+ 28 — 20	4.0	62.9	8.7	3.7	5.6
Elutriation						
Fraction 4	+ 20 — 13	1.1	62.0	6.0	1.0	1.1
Elutriation						
Fraction 5	+ 13 — 10	0.2	60.1	4.5	0.2	0.1
Elutriation						
Overflow	— 10	0.4	42.4	3.0	0.2	0.2
Composite		100.0	68.4	6.3	100.0	100.0

**Magnetic Separator Test Results**

	Wght	Percent WO <sub>3</sub>	Sn	Percent Distribution	
				WO <sub>3</sub>	Sn
1. Dried as received—screened through 85 mesh B.S.S.					
Magnetic Product	89.5	74.2	0.43	98.2	5.7
Non-Magnetic Product	10.5	11.8	60.8	1.8	94.3
Composite	100.0	67.6	6.8	100.0	100.0
2. Filtered, washed with equivalent weight of water to ore, dried, screened through 85 mesh B.S.S.					
Magnetic Product	90.6	75.1	0.33	99.1	4.4
Non-Magnetic Product	9.4	6.74	68.6	0.9	95.6
Composite	100.0	68.7	6.7	100.0	100.0