

NOTE.—All communications on Departmental business to be addressed to the Chief Chemist and Metallurgist, Mines Office, Launceston.



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Department of Mines Laboratory,

Launceston, 23rd September 1942.

N<sup>o</sup> 78

Report No. 754/42.

*Duplicate*

A sample of slate was received from the Director of Mines on the 8th inst., and stated to be obtained from Burnie. The sample was labelled B.G.1. 3" wide N.E. end of shaft.

The sample is dark grey to black in colour and exhibits numerous black highly polished surfaces resembling graphite or possibly slickensided carbonaceous matter.

This report deals with the determination of the ash content, flotation tests for the separation of the black mineral and identification of same.

Percent ash in sample. . . 88.5

Flotation Tests.

Reagents. Test 1. Frothers only - Cresylic Acid and Pine Oil.  
 Test 2. 0.5 lb/ton Amyl Xanthate, Cresylic Acid and Pine Oil.

Rougher concentrates were once re-cleaned and sodium silicate was used alone in test one but with the addition of sodium cyanide and lime in Test 2 for depression of pyrite. p.H. value of pulp in Test 1; 6 - 6.5.

Results.

Test 1.

	Ash			Ash		
	Percent.	Percent.	Percent Distrib- -ution.	Percent.	Percent.	Percent Distrib- -ution.
Recleaner Concentrates.	22.1	74.8	18.7	23.5	75.0	20.0
Recleaner Tailings.	11.7	89.1	11.9	15.6	88.4	15.6
Rougher Tailings.	66.2	91.9	69.4	60.9	93.2	64.4

The black coloured flotation concentrate does not exhibit

FROM Department of Mines Laboratory,

Launceston, Tasmania,

TO.....The Director of Mines.....

the normal characteristics of graphite as to lustre or feel. A small quantity of the concentrate was treated to remove gangue minerals and the residue was tested and found to contain a high percentage of carbon. The volatile combustible matter was determined using a very small sample and the result showed approximately twenty percent. Confirmation on a larger sample is however necessary.

Small fragments of the sample were treated as above for removal of gangue minerals and the residue examined microscopically -- no crystalline structure was observed.

### Conclusions.

The black mineral can be concentrated by flotation and tests indicate that the black material is carbonaceous matter rather than graphite.

CHIEF CHEMIST AND METALLURGIST.

The Director of Mines,  
Hobart.