

TR6-204-205

R. 385

CORNWALL COAL COMPANY

COAL WASHERY

Sample

A sample of rejects from the secondary shale (middlings) elevator was received from Cornwall Coal Company. The middlings were screened over a 1-inch spaced grizzly. The sample consisted of the grizzly oversize crushed to minus $1\frac{1}{4}$ -inch size.

The sample received weighed approximately 160 lbs.

Investigation

The company requested that the plus $\frac{1}{8}$ -inch material be tested by heavy liquid solutions to determine the possibility of recovering useful coal from the crushed product.

Summary

The tests indicate that about 40% by weight of the crushed reject could be recovered as useful coal, with an ash content of 25.7%.

Examination of the table below shows that the ash content of the "Float 1.6" product increases with increase in size from 22.2% for the plus $\frac{1}{8}$ -inch size to 30.3% for the plus $\frac{3}{8}$ -inch size.

A better overall product might be obtained by crushing the reject to say minus $\frac{3}{8}$ -inch before returning to the washery circuit.

Heavy Liquid Separation

The sample was screened and the various sized fractions separated into several products by heavy liquids. The ash contents of the various products are given in the table below.

Size Fraction	Total Sample		Float 1.6		Sink 1.6 Float 1.7		Sink 1.7 Float 1.8		Sink 1.8	
	Wght %	Wght %	Ash %	Wght %	Ash %	Wght %	Ash %	Wght %	Ash %	
+ $\frac{3}{8}$ "	23.3	7.5	30.3	4.9	40.1	3.6	50.6	7.3	65.7	
+ $\frac{1}{2}$ "	28.4	12.0	26.3	4.9	40.5	4.3	49.5	7.2	68.3	
+ $\frac{3}{4}$ "	16.2	7.4	24.6	3.0	40.6	1.5	49.5	4.3	69.7	
+ $\frac{1}{2}$ "	17.9	9.5	23.7	2.8	41.2	1.6	51.2	4.0	70.2	
+ $\frac{3}{8}$ "	7.2	3.7	22.2	0.9	40.3	0.7	50.7	1.9	71.0	
Total + $\frac{1}{8}$ "	93.0	40.1	25.7	16.5	40.5	11.7	50.1	24.7	68.3	
Minus $\frac{1}{8}$ "	7.0	

The minus $\frac{1}{8}$ -inch material amounted to 7.0% by weight, and contained 39.6% ash. The moisture contents of the various fractions ranged from 2.1 to 3.7%, but all results are shown on a moisture free basis.