Director, Mines Branch

CANADA

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

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ROLLS CRUSHING AND SCREENING TRIALS ON A SAMPLE SUBMITTED BY THE BAKER TALC COMPANY

by

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Note: This report applies essentially to the samples received. The report and related correspondence may not be used at any time, in whole or in part, for publicity or advertising purposes.

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ROLLS CRUSHING AND SCREENING TRIALS

ON A SAMPLE SUBMITTED BY THE BAKER TALC COMPANY

Sixty-five pounds of material was sent in with a request that rolls crushing be tried as a method of producing a product all less than 35 mesh in size and with not more than 40% -200 mesh content, the -325 mesh to be as small as possible.

Test Work

A sample was cut from the feed and a screen analysis was made as follows:

+35 mesh	67.5%
-35+200 mesh	26.0%
-200+325 mesh	0.9%
-325 mesh	5.6%
	100.0%.

Test No. 1 consisted of repeated passes through the rolls with a screen analysis following each pass. Results of this trial are given below:

Screen Analyses of Products Following Successive Passes Through Rolls

Fraction	1st Pass	2nd Pass	3rd Pass	4th Pass
+35 mesh	53.4%	43.7%	19.3%	19.2%
-35+200 mesh	37.8	44.3	60.8	61.3
-200+325	2.4	3.7	5.5	5.7
-325	6.4	8.3	14.4	13.8
	100.0	100.0	100.0	100.0

Tests Nos. 2, 3 and 4 were locked type trials in which a feed lot was passed through the rolls, the product screened on 35 mesh, the +35 mesh made up with fresh feed to the original feed weight and repassed through the rolls. In each test four cycles were completed, with indications that in the third and fourth cycle fairly stable conditions were achieved. The principal difference between these three tests was that in the first (test No. 2) a small rolls gap was used (approx 1/2 mm), in the second (test No. 3) this was reduced so the rolls were just touching, while in the third (test No. 4) the rolls were well tightened. Comparison is presented below:

Production Data and Product Screen Analyses
On Three Rolls Trials

Test No.	2		3		4	
-35 Mesh Produced	(gms)	(%)	(gms)	(%)	(gms)	(%)
1st Pass	394	42	613	61	762	76
2nd Pass	278	30	515	52	690	69
3rd Pass	308	33	468	47	655	66
4th Pass	310	33	520	52	652	65
Total	1290		2116		2759	
Recovered	1242	65	2040	79	2657	86
Dust Loss	48	2	76	3	102	3
+35 Mesh 4th Pass	625	33	480	18	348	11
Total Fed	1915	100	2596	100	3107	100
Screen Analysis Combined -35 Mesh						
+35 mesh		0		0		0
-35+200 mesh		80.3		80.0		78.1
-200+325 mesh		4.8		5.4		5.7
-325 mesh		14.9		14.6		16.2
		100.0		100.0		100.0

Summary

Repeated passes are not so effective as recirculation of overwire. Test 4 suggests that a high recovery could be expected with moderate dust loss and satisfactory product.

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