

CONVEYING TAILING IN LAUNDERS

(September 14, 1907)

The Editor:

Sir I have read with much interest the description appearing in your issue of June 29, on conveying tailing in cast-iron pipe at Guanajuato, also the further statements on the same subject by Mr. Van Law in the issue of July 20. Having in the last two years made about 7,000 experiments on the carrying capacity of launders, the subject is of course interesting to me. In my experiments on tailings which were clean pure quartz and quartzite (probably much more angular and sharp than the material at Guanajuato) I find that on a grade of 1.5% in a rectangular launder on material of the fineness mentioned in your article one pound of water will only carry off 0.022 lb. quartz, when the launder has the most economical width for the quantity of material carried.

My experiments also show that with the most economical width of launder, the same material with water in the proportion of $7\frac{1}{2}$ to 1 would require a grade of nearly 5% . Only on absolute slime did I obtain better results in a V-shaped launder than in a rectangular one. My experiments were checked, some twice and some three times.

Why my results are so much lower than those mentioned, I would like to ascertain. I know Mr. Van Law personally and know the figures he has given can be nothing but correct, and the difference must be wholly in the nature of the two materials handled (this refers to the issue of June 29).

With your permission, and begging the pardon of my brother engineers, I can positively state that the "wetted perimeter" has nothing whatsoever to do with the carrying capacity (as far as solids go) of a launder. Personally, I was formerly under the impression that it had, but my experiments have conclusively proved that we have all been wrong in this assumption. For example, a 1-in. launder using 25 lb. water per min. will carry exactly one-half of the tailing of a 2-in. launder using 50 lb. water, and one-tenth of a 10-in. launder using 250 lb. water per min., all, of course, on the same grade; that is, the carrying capacity in sand, etc., is proportional to the width. This I can prove by figures from about 500 actual experiments. In the next state-