

The capacity of the separator wet is about 100 lbs. per hour. About 0.02 cu. ft. of water per minute is required to reduce the damp sand to a pulp, and about 0.10 cu. feet per minute to wash the tails from the heads. Sometimes water is used for cleaning the heads and tails from the bottom of the cylinder and sometimes not. The water could easily be pumped back and used over and over. The total power used in the present small machine when running wet costs on an average about 50 cents per ton of sand, but on a large machine this could certainly be cut down to one half or one quarter that amount. The separator either wet or dry is usually run at 87 revolutions per minute. The amperages used range from 3 to 11, 5 and 7 being the commonest.

The machine used in the above tests was designed by Dr. J. B. Porter, Professor of Mining Engineering, and built in the shop of the Mining Department of McGill University. The work detailed was all done under his advice and general direction, but great credit is due Mr. R. A. Chambers, a former student, for tests which he carried out on the Seven Islands sand. The author is responsible for the more recent work, and thanks are due Mr. J. Obalski, the Mining Engineer of the Province of Quebec, for material. The chemical analyses were nearly all made by Mr. M. L. Hersey, Provincial Analyst, by authority of Mr. Obalski. The main part of the sand was furnished by Mr. William Robertson, of Montreal, but the Seven Islands sand came from Mr. Ganong, of Quebec. The wet and dry tests last made were carried out at the suggestion of Mr. Obalski and samples of all products were included in the Canadian Exhibit at Liege this year.

On the conclusion of the paper the author exhibited a set of samples of the sand sent to Liege, as follows:—

- 1: Original sand.
- 2: Heads of dry concentration.
- 3: Tails dry concentration.
- 4: Heads of wet concentration.
- 5: Middles of wet concentration.
- 6: Tails of wet concentration.