

Sludge-channel restriction.—Willows removed, dredging, stop-banks, diversion.

We recommend that the use of the rivers as sludge-channels should be restricted in future as set out herein, and that the rivers be cleared from all growth of willows, be dredged, and stop-banks formed, with culverts and flood-gates where required, and that the course of the rivers be shortened by river-diversions.

Tree-planting.

Also, we recommend that the high-lying lands of the watersheds, where they have been denuded of trees for mining or other purposes, should be re-afforested.

Disposal of tailings : Sundry schemes.

The question as to whether it would be possible to dispose in future of the mining tailings in some other method than by permitting them to be cast into the rivers has met with very serious consideration, and your Commissioners have reluctantly arrived at the conclusion that the adoption of any one or more of the schemes suggested would not be in the interests of the Dominion, as involving such an increased cost in the production of the gold as might, and probably would, react in the direction of preventing the mining of low-grade ores, which at present are capable of being worked at a small profit, but only in conjunction with ore of a higher grade.

Existing reduction-works.

The position, so far as the adoption of any scheme of disposal of tailings other than by the rivers, is somewhat complicated by the fact that the reduction-works are not concentrated in one district. There exists at present, and working, two at Waihi Township, one at Waikino, two at Karangahake in the valley of the Ohinemuri, and one upon the Komata Creek. There are also other batteries in the district which it is understood are not at present in operation.

The following are some of the many suggestions that have been made and inquired into by your Commission :—

Discharge of tailings to sea.

That the reduction-works at Waikino, being the largest of the works existing at present, should be removed to Waihi, or to some point overlooking the Pacific Ocean above the Waihi Beach, so that the tailings therefrom and from the Waihi works could be discharged outside the watershed, leaving the material from the works at Karangahake to be dealt with under a separate scheme. The tailings from the Komata Reefs Company's works must be dealt with quite separately in any case, being in a different watershed. As the works were placed at Waikino, rather than at Waihi, in order to obtain water-power and a sufficient supply of the water required for the operations, it would evidently be necessary to pump the water required in the reduction processes as well as to compensate for the loss of water-power. This idea has been dismissed because of its great expense.

Stacking tailings.—Pumping tailings.—Pipes : Open channels.—Railway carriage of tailings.—Cutting-nature of slimes.

That the tailings should either be stacked on lands adjacent to Waihi or on lands adjacent to Paeroa, or be turned into the sea on the Waihi Beach or the Tauranga side of the coastal range, being taken to one or other or all of these places by either pumping with water through closed pipes, by pumping or by other method of elevation to such heights that the water-carried sands would flow down by gravity, or by railway carriage. The slimes and fine tailings, although to the touch they feel smooth, were shown under the microscope to be composed of sharp particles of quartz, and ample evidence was adduced to show that the wear-and-tear caused by these cutting-edges made it practically impossible to adopt any system of pumping or conveyance economically for any distance through wooden, cast-iron, or steel pipes, or open channels. Apart from the practicability of water carriage, the working cost of these various schemes amounted to from 2s. to 3s. per ton of ore, which seemed to your Commissioners to be quite prohibitive.