

APPENDIX B.

REPORT ON WATER RACES BY THE ENGINEER-IN-CHIEF.

The ENGINEER-IN-CHIEF to the Hon. the MINISTER for PUBLIC WORKS.

Public Works Office, Wellington, 1st July, 1875.

THERE are four important Water Races for Gold Fields now under construction, three of which are in the South Island and one in the North Island.

SOUTH ISLAND.

WAIMEA RACE.

This race is 15 miles 75 chains long, and will carry 40 heads of water, or 40 cubic feet per second. It is all under construction except the dam and headworks, the plans and specifications for which are prepared, and will be submitted to public tender very shortly.

The total cost of this work will be £130,000.

NELSON CREEK RACE

Will be 19 miles 15 chains in length, of which 16 miles 21 chains are now under contract; the remaining portion will be shortly begun.

The total cost will be £65,000.

MOUNT IDA RACE.

This work has been constructed directly by the Provincial Government of Otago, and has not been under my charge. I cannot therefore report on it.

SUBSIDIZED RACES.

Money has been advanced to four private Companies, viz., the New River, the Hibernian, the Hohonu, and the Kanieri. It has been properly applied to the work for which it was intended.

Subsidies have also been granted to the Arrow, Beaumont and Tuapeka, Carrick Range, and Mount Pisgah Races, but these have been paid on the certificate of the Otago provincial authorities, in whose care the supervision of the expenditure has been left.

SURVEY.

Randall Creek Race (or Napoleon Hill).

The length of this race as proposed would be $47\frac{1}{2}$ miles, and the cost is estimated by the District Engineer at £60,000, which, I am afraid, is too low. The probable revenue does not seem sufficient to promise a fair return on so large an expenditure, especially when the return and the cost are so speculative, as work on the gold fields always proves itself to be.

I attach a copy of Mr. O'Connor's report on this survey.

Mikonui Race.

The surveys are completed, and estimates will be prepared as soon as possible. The length of the race will be 15 miles; and the capacity, 60 heads of water, of one cubic foot per second.

NORTH ISLAND.

THAMES RACE.

The whole of this race is now under contract, except the distribution; plans and specifications for which are now being prepared, and will be ready in August, when tenders will be invited.

The total cost will be £60,000.

GENERAL.

The total cost of the three races under construction will be £255,000, which is £41,000 more than the former estimate.

One principal cause of this excess is the unexpected difficulty in getting foundations for the head-work dams of the Nelson and Waimea Creek Races, which have to be founded at a much greater depth than was at first thought necessary.

The whole of the estimates of the cost of water-races have proved to be very untrustworthy. The work is such that it is quite impossible for myself, and nearly so for the District Engineers, to check the information received from the surveyors who lay out the races, except in a general and far from satisfactory manner. Work of this sort can only be priced at so much per chain, and the judgment of the person making the estimate must, to a great extent, be trusted to.

I have, &c.,

JOHN CARRUTHERS,
Engineer-in-Chief.

The Hon. the Minister for Public Works.
