

WAIMEA-KUMARA WATER-RACE.

Taking the two water-races previously described as one work, they cannot be said to return a large percentage on the capital invested in their construction, but this is owing to the costly manner in which the Waimea Race was constructed. The total cost of the work up to the present time, exclusive of the cost of the tailings channel at Kumara, which was handed over as a public tail-race for the field to the miners, has been £160,984 4s. 2d.

The following statement will show the result of the working of this water-race, as a whole, for the year ending the 31st March last:—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the end of each Month.	Number of Men employed.	Approximate Amount of Gold obtained.	Value of Gold.
1892.							
April	£ s. d. 596 6 4	£ s. d. 534 19 4	£ s. d. 187 5 10	£ s. d. 156 7 9	222	Oz. 993	£ s. d. 3,872 14 0
May	607 13 3	638 17 10	205 7 3	161 14 2	219	1,013	3,950 14 0
June	603 5 4	630 14 0	199 19 9	155 8 11	212	1,016	3,962 8 0
July	579 8 3	593 18 6	174 3 11	136 8 8	217	970	3,783 0 0
August	684 19 6	759 7 7	209 12 2	144 8 1	225	1,095	4,270 10 0
September	733 9 6	612 19 11	196 0 5	142 17 1	216	1,130	4,602 0 0
October	652 7 7	805 18 8	211 13 4	117 2 11	226	1,050	4,095 0 0
November	546 10 0	370 0 0	208 9 8	181 0 2	219	890	3,471 0 0
December	453 7 1	562 4 8	303 13 5	119 7 2	221	740	2,886 0 0
1893.							
January	437 14 2	293 4 10	290 12 3	163 19 10	208	700	2,730 0 0
February	515 11 5	568 14 10	222 19 5	207 13 2	194	830	3,237 0 0
March	394 0 7	387 1 8	230 13 11	195 18 10	187	670	2,613 0 0
Total	6,804 13 0	6,758 1 10	2,640 11 4	..	213	11,147	43,473 6 0

The above statement shows that the value of the sales of water last year was £6,804 13s., as against £7,767 7s. 2d. for the year previous, and the cost of maintenance £2,640 11s. 4d., as against £2,369 4s. 9d. for the former year, thus showing that the value of the sales of water last year has diminished to the extent of £962 14s. 2d., while the expenditure on maintenance has been increased by £271 6s. 7d.; the actual profits on the working last year being £4,164 1s. 8d., as against £5,811 5s. 9d. for the former year. Taking the profits for the past year it gives nearly 2·6 per cent. on the capital invested in its construction.

MOUNT IDA WATER-RACE.

This water-race was managed by a Trust since its construction up to the 1st of January last, but the revenue derived from sales of water have never paid the expense of maintenance. This is to some extent due to the great length of the race, which is over seventy miles, and the character of the country through which it is constructed. The whole of the race, with the exception of about 4 chains of fluming and 10 chains of tunnel, is an open conduit following the contour of the ground. It commences at the middle branch of the Manuherikia River, crossing numerous creek-beds in an open ditch, and terminates at Speck Gully, Naseby, being at an elevation at its terminating point of about 2,000ft. above the level of the sea. The race-line for the first twenty-five miles follows the foot of a high range of mountains having steep sides, and every heavy rain and melting of the snow in spring brings down large quantities of shingle or broken rock, and fills up the creek-beds through which the race is constructed; so that after every flood or heavy rain the ditch is filled up with shingle, not only in the creek-beds, but for a considerable distance on the down-stream side of the race. During the early portion of the spring there is plenty of water in these creeks, so that it is not necessary to turn the whole of them into the race. Those near the head are allowed to flow down their beds; but generally about the end of December the water in the whole of them is required to fill the ditch, and, even when the whole of the creeks are turned in, there is not sufficient water for the requirements of the goldfield at Naseby in very dry weather.

The water-race is constructed across the different creek-beds, so that the slightest rain which raises the creeks washes away the lower side of the ditch, and these have to be built up again before any water can be sent down. The leakage at each of these creek-beds was also very considerable. On the 5th of February last the water was turned out of the race from the east branch of the Manuherikia River to Naseby, and a commencement made to clean out the ditch. In many places the ditch was filled up with gravel and sediment from the banks to a depth of 16in. so that when water was available a sufficient supply of water could not be sent down. Piece-work contracts were let to the miners to clean out the race in mile sections, at prices varying from 1s. 6d. to 10s. per chain. At the East Eweburn Creek, where a flume was constructed, the shingle coming down that creek had filled up the bed to within 9in. of the bottom of the flume, so that the first flood would have carried the flume away. A siphon is being constructed across this creek some distance down where the flume was constructed, which will cut off some very bad sidelings and give less trouble in future. At the crossings of the different creek-beds trenches were cut down until an impervious stratum was reached, and a wall of sods built with a stone apron on the lower side to protect the sod-wall and prevent the sods from being washed away. These stone aprons are constructed to a height of 18in. above the bottom of the ditch, and some sods built on the top to raise the water to the proper height; but when a flood takes place the sods will wash off to the level of the stones, but never allow the whole of the water to be cut off. At the lower side of these crossings a gate is placed in the race, to prevent a quantity of shingle being carried down the ditch with the stream. This will have the effect of considerably reducing the cost of maintenance. There is no doubt in many instances siphons would have been preferable, as they would have cut off many of the bad portions of the ditch going round steep sidelings; but the expense of siphons would have been very great, and the down-stream side of the ditch from each of these creeks would always have to be kept in repair to take the water from each of these creeks.