

pumps, and double the capacity of the single main, so that provision for more water and larger mains has now become imperative.

In adopting the 18-inch main, as was very properly done, it was fully understood at that time that a second or duplicate main would be required in about twelve years (that is in 1872) or when the population "approached" 40,000. Not only, however, has the population reached the point fixed by them when another main would be required, but the consumption per head having largely exceeded the estimate of the consulting engineers, larger capacity in the main becomes imperative even though the population had not reached the figure named by them. The quantity now required for 35,000 is that which they estimated would be sufficient for 50,000 people.

THE FILTERING BASIN.

The capacity of the pumps is not sufficient to test the yield of this basin since its enlargement. But after a week's pumping with both engines at the rate of two and a half million gallons per day, the surface of the basin was drawn down 2 $\frac{6}{10}$ feet below the lake level of the second week of October last.

This would give roughly one million gallons for each foot of filtering head, and as the filtering head is increased this proportion should be increased, but if only maintained, the basin, when drawn down to its full extent, should yield at least six million gallons daily.

Whatever the result may be when by the enlargement of the pumps a test can be made, there is no reason to suppose any further enlargement will be required for years to come. and when such enlargement does become necessary it will be only an extension of the trench along the beach.

The cost of the enlargement added to the original cost of excavation has been but a fraction of what would have been required in order to obtain the water from the lake by any other means; and no other method can approach it in efficiency.

It would be financially impracticable to carry a tunnel, or suction pipe, to a point where the water would be at all times undisturbed by easterly gales and in either case an expensive terminating crib of perishable materials must have been constructed and maintained.

The basin is composed of sand and gravel, which require no repairs, and affords a supply at all times uniform in quality, and of that quality, the highest which it is possible to obtain.

PUMPING POWER.

No additional engine power will be required in order to increase the supply, that power being in excess of the requirements, but as the capacity of the pumps will soon be reached, larger ones should be substituted at the same time that additional capacity is given to the main. The present pumps working constantly can together deliver about 2 $\frac{3}{4}$ million gallons per diem, or say, one half more than the average present consumption, and as much as the present main ought to carry. In order to force this quantity through the