

**Joint research on reusing advanced treated effluent and on performance of advanced treatment process in Todoroki Water Treatment Center and Egawa river waterway**

Whole term

2003.2~2004.2

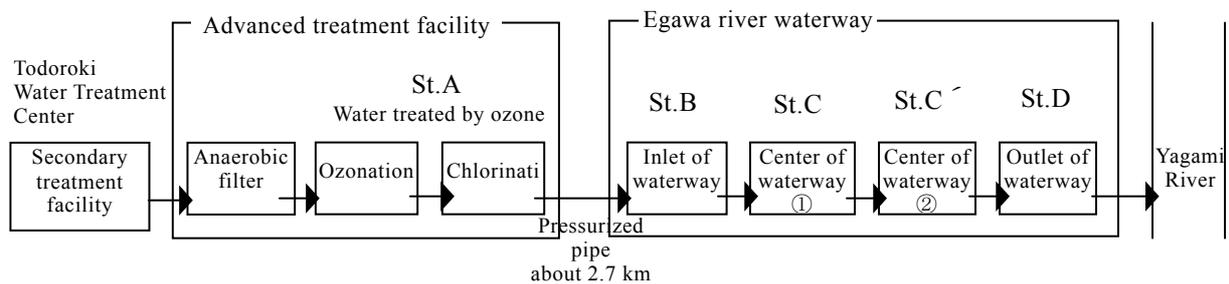
**(Purpose)**

In Kawasaki City, a committee for planning the correct use of Egawa site was assigned in 1986.

Thereafter, residents submitted a petition to construct a park using the water and forest in the Egawa River, and it was accepted. It was confirmed in the basic plan of the waterway that an advanced treatment process would be included in the Todoroki Water Treatment Center. In 1996, the permission for a model project for recycling treated water was obtained from the Ministry of Land, Infrastructure and Transport, and then water flowing was started in June 2003.

The basic concept of the waterway is to act as an open space for the residents to rest. Because the waterway carries the reused treated wastewater, it is only for sightseeing and for attracting people. The slope and the stairs at the waterway are considered to make people feel that water flows near them.

In this research, the operational condition of the advanced treatment in the Todoroki Water Treatment Center and factors such as oxic media, ozone dosage, and hypochloric acid dosage were observed with respect to the fact that whether advanced treatment would affect the water quality. In addition, cost effective and efficient operating method of the advanced treatment and the waterway was arranged.



**(Results)**

- 1) Nitrification condition of oxic media showed LV as 100m/d.
- 2) Ozone dosage to remove color and odor was 4mg/L
- 3) The targeted water quality of a supplementary water source to the waterway was referred in the “ Manual for using treated wastewater as landscape and water-friendly usage” and the targeted water quality of the effluent in a waterway was referred in the standard water quality. And sanitary water quality was imposed on river water.
- 4) Investigation of the waterway during the summer, autumn, winter resulted in more E. coli. concentration than the target.
- 5) Reason for 4) was higher concentration of E. coli. prior to disinfection than that on a normal day. It has made supplementary water possessed low free residual chlorine concentration.
- 6) In accordance with an investigation of the waterway and the results of the tests, it was found that total residual chlorine of 0.3mg/L was consumed.
- 7) To achieve the targeted quality of waterway, total residual chlorine of the supply water should be over 0.3mg/L.

Collaborators: Kawasaki City  
Japan Institute of Wastewater Engineering Technology

Personnel in charge of the study: Syuji Tanaka, Hirokazu Sano, Takeshi Kokubun

Keywords

Small stream, Use for landscape, Targeted water quality,  
Operation and maintenance, Residual chlorine concentration