

The Research on the Technical Standard for the Treated Wastewater Reuse

Whole term

2003. 4 ~ 2005. 3

Text P.85~P.90

(Purpose)

Almost 2 % of all treated wastewater (about 200 million m³/year) is reused all over Japan, and the various uses of treated wastewater include flushing, snow melting, environmental use, industrial use, spraying, and so on. The treated wastewater reuse has become more important because of the importance of saving water resources in cities, and the expectation of a new use of treated wastewater, such as water sprinkling as a measure against heat-island. On the other hand, there has been a big social problem, that is, the human health damage by pathogenic microbes such as cryptosporidium and virus through drinking water or foods, which has boosted general awareness of the safety of water. In the meantime, the law of hygiene for buildings was revised and came into operation on April 1, 2003. By the revised law, a new standard for the reclaimed water supply systems was set.

From these backgrounds, we held "The committee on the technical standard for the treated wastewater reuse" (Chairman; Visiting Prof. Mitsumi Kaneko, University of Ritsumeikan) in order to review "The technical guideline for treated wastewater recycle (resolution)" (1981.3) and "The manual of treated wastewater quality for landscape use and recreational use (resolution)" (1990.3). We conducted necessary investigations and set a new technical standard for the treated wastewater reuse. The new standard was noticed to prefectural and other local governments from Ministry of Land, Infrastructure and Transport on April 22, 2005.

(Results)

We restricted the scope of the application of the new standard to the form of unrestricted use of the reclaimed wastewater directly distributed from WTP. On a basis of the actual conditions in Japan, we selected the following 4 uses, toilet flushing water, spraying water, landscape water (touching is not permitted), and recreational water (touching is permitted) as the scope. The excerpt of the new technical standard for each use is shown below. More information and comments are expected for the promotion of appropriate use of reclaimed wastewater.

Table - The new technical standard for the treated wastewater reuse in Japan (excerpt)

	Scope of the standard	Toilet flushing use	Spraying use	Landscape use	Recreational use
<i>E.coli.</i>	Outlet of WTP	N.D. ¹⁾	N.D. ¹⁾	≤10CFU/ ml as total coliform group ¹⁾	N.D. ¹⁾
Appearance		Not unpleasant			
Turbidity		≤ 2 (Target value) ²⁾			
Color		≤ 40 units			
Smell		Not unpleasant			
pH	5.8~8.6				
Residual chlorine (Target Value)	Responsibility demarcation point	≥ free 0.1mg/ ℓ or combined 0.4mg/ ℓ	≥ free 0.1mg/ ℓ or combined 0.4mg/ ℓ ³⁾	/	≥ free 0.1mg/ ℓ or combined 0.4mg/ ℓ ³⁾
Facilities	/	Sand filtration or equivalent			Chemical precipitation and sand filtration or equivalent
Remarks		1) Test water should be 100 ml or more 2) Unit ; mg-kaolin equivalent/ ℓ	1) Test water should be 100 ml or more 2) Unit ; mg-kaolin equivalent/ ℓ 3) Not applied in case of unnecessary of the long time disinfection effect	1) Provisional value 2) Unit ; mg-kaolin equivalent/ ℓ	1) Test water should be 100 ml or more 2) Unit ; mg-kaolin equivalent/ ℓ 3) Not applied in case of unnecessary of the long time disinfection effect

The joint research with National Institute for Land and Infrastructure Management, Ministry of Land, Infrastructure and Transport

The funded research from Osaka Pref., Saitama Pref., and the joint research with Tokyo Pref., Kobe City, and Fukuoka City

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key words

Reclaimed wastewater, Water quality standard, Water for landscape use, Water for recreational use