

## Research on confluence improvement that uses disk filter

Whole term

2001.6 ~ 2004.3

### (Purpose)

A disc filter is an apparatus that can be used for removing SS and BOD from the untreated sewage discharged from a storm overflow chamber of combined sewerage in wet weather, the primary effluent of a sewage treatment plant (the effluent from the first sedimentation tank in wet weather), the effluent of a pumping station (untreated sewage discharged from a pumping station in wet weather), secondary effluent in dry weather, etc.

For the present study, demonstration tests were performed for the above-mentioned effluents, to confirm the applicable range and treatment performance of disc filters. Further, the methods of design, construction, maintenance, etc. were examined, and the results are compiled as a technical information material for the purpose of contributing to the widespread use of this technique.

### (Result)

#### 1. Anticipated places of application and the effluents tested

Anticipated places of application and the effluents tested are shown in Fig. 1.

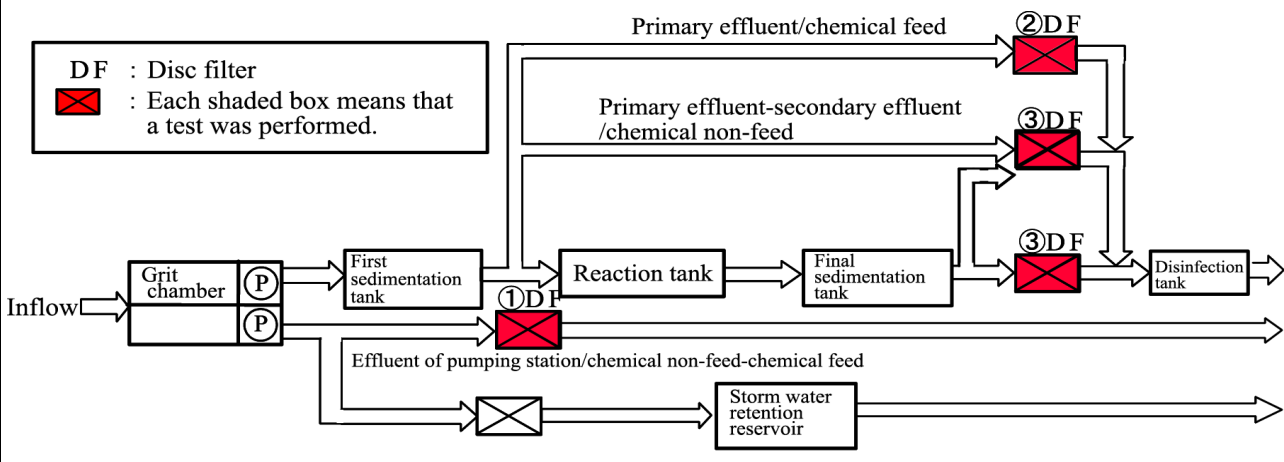


Fig. 1 Anticipated places of application and the effluents tested

#### 2. Experimental results

Experimental results are shown in Table 1.

Table 1 Filtration performance

Place of application (symbol in Fig. 1)	Effluent tested	Whether or not coagulant was fed	Filtration rate	SS removal rate	BOD removal rate
A	Effluent of pumping station	Fed	3,000m/d	70%	60%
		Not fed	2,250m/d	40%	30%
B	Primary effluent	Fed	2,550m/d	70%	60%
C Used for filtering both effluents	Primary effluent	Not fed	300m/d	50%	30%
	Secondary effluent	Not fed	1,050m/d	80%	50%
D			1,500m/d	60%	40%

### (Summary)

From the results of demonstration experiments, it could be confirmed that the disc filter can remove the BOD and SS contained in the effluent of a pumping station, primary effluent, etc. and is effective as a combined sewerage improving measure.

The filtration performance shown in Table 1 and the matters to be noted for design, construction and maintenance were compiled to prepare a technical information material.

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Keywords

Disk filter, Filtration equipment, Confluence improvement, Pollution load amount reduction, Primary effluent, Secondary treatment water