

Sewage-derived Fiber Utilization System

History of Development

Hard-to-be-dewatered sludge including anaerobic digested sludge contains extremely less fiber than common mixed raw sludge. So, the present sludge treatment has some issues that are decrease of dewaterability, increase of water content rate of dewatered sludge, and the shortage of final disposal site. This system has been developed for cost reduction by improvement of dewaterability.

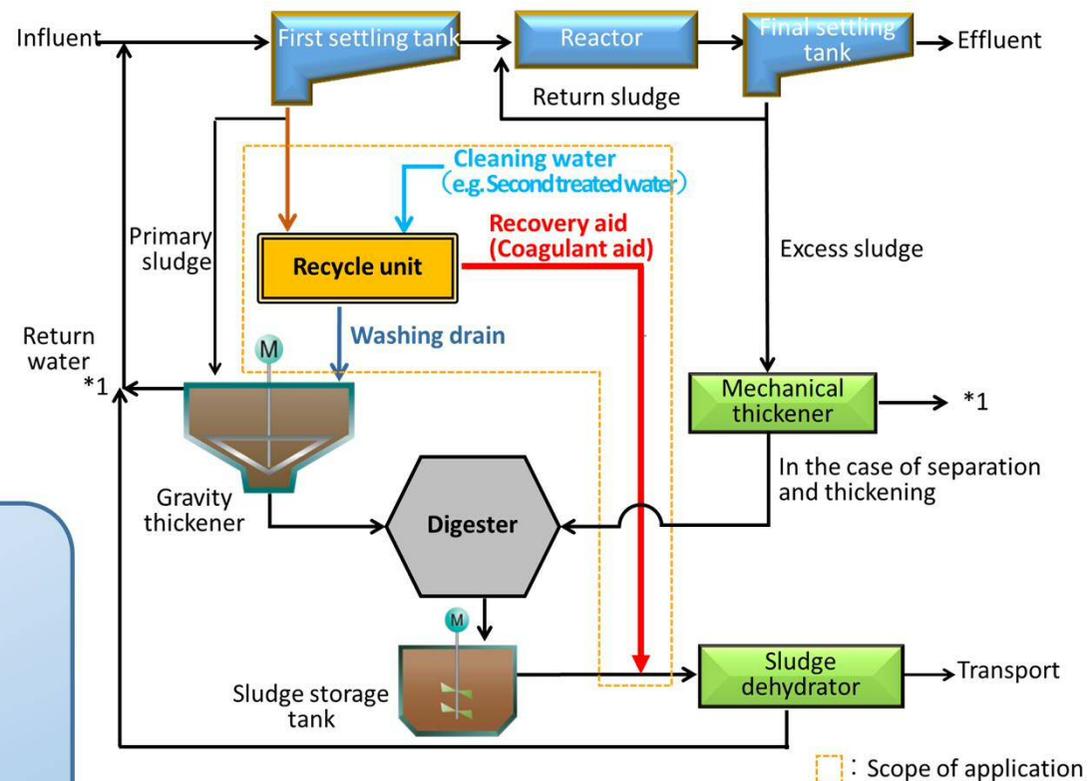
Technology Summary

The system recycles fiber from primary sludge and adds it into hard-to-be-dewatered sludge to improve its dewaterability. The adoption of the system enables reduction of water content rate of dewatered sludge, using inexpensive chemical, reduction of chemical injection rate and reduction of following facilities' share of work.

Benefits of Technology Adoption

- Low water content rate of dewatered sludge reduces the amount of dewatered sludge (e.g. 7-8pt reduction in some case^{*1}) ⇒ Reduction of sludge disposal cost
- Use inexpensive chemical and less chemical injection rate of high polymer coagulant (e.g. 50% reduction of chemical injection rate in some case^{*2}) ⇒ Reduction of high polymer coagulant cost

*1: Addition rates of aid approx. 20%/TS, compare with no aid addition *2: Individual research has details



Schematic flowchart of sewage sludge-derived fiber utilization system

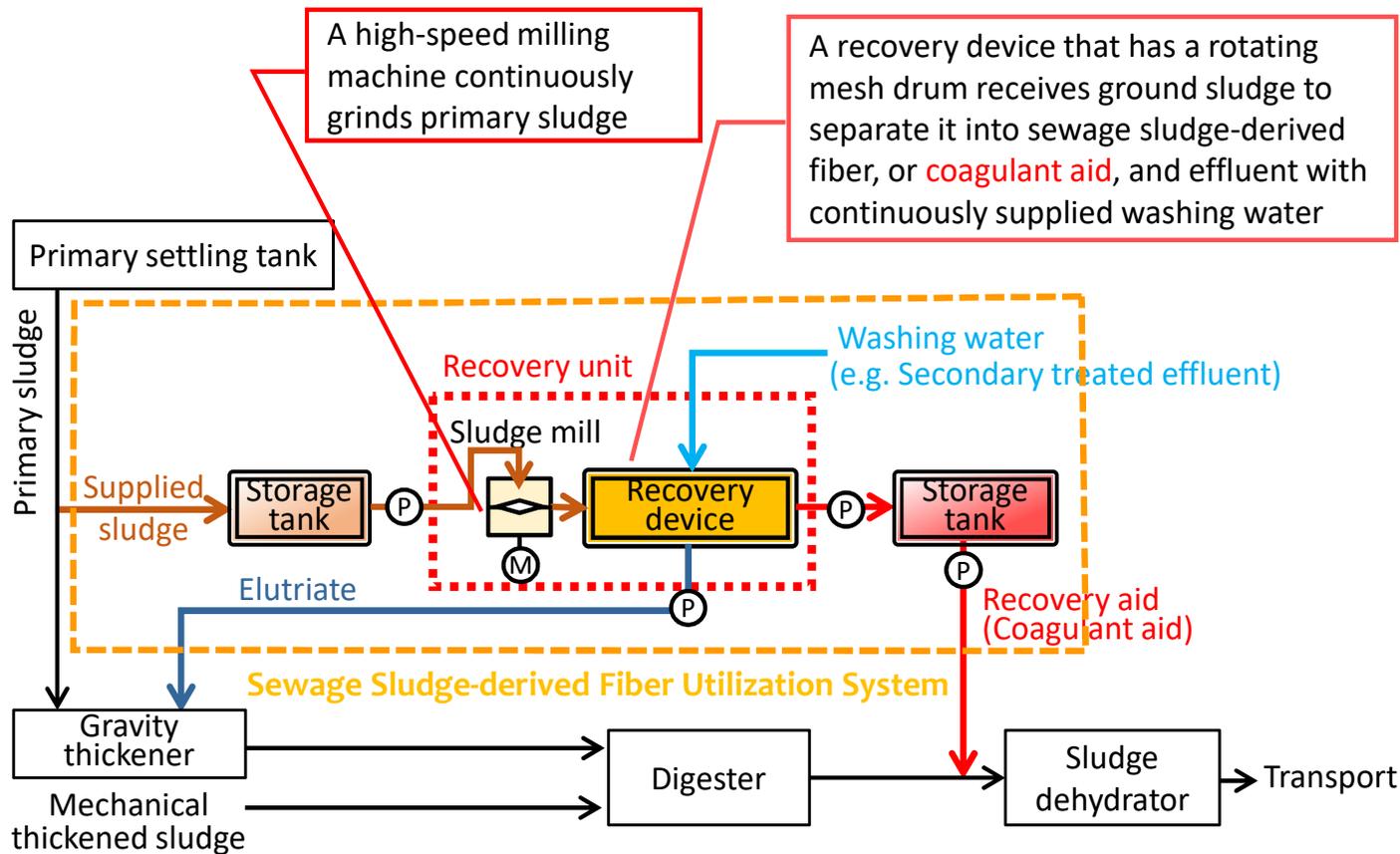
Scope of Application

1) WWTPs that have a first settling tank

2) WWTPs that:

① Need improvement on dewaterability of hard-to-be-dewatered, anaerobic digested sludge, and consider reduction of disposal cost

② Need improvement on dewatering operation for their mixed raw sludge, of which property is unstable



What is sewage sludge-derived fiber?

Fibriform materials contained in primary sludge that is withdrawn from a first settling tank in WWTP

What is recovery (coagulant) aid?

Sewage sludge-derived fiber contained in primary sludge and separated from elutriate in a recovery unit. Primary sludge is ground in a sludge mill with high-speed rotation and supplied to a recovery device to be separated into elutriate and sewage sludge-derived fiber, or coagulant aid.

Flowchart of Sewage Sludge-derived Fiber Utilization System