Inventarisatie van AB-systemen in NL

A-trap inventarisatie, 21 juni 2011

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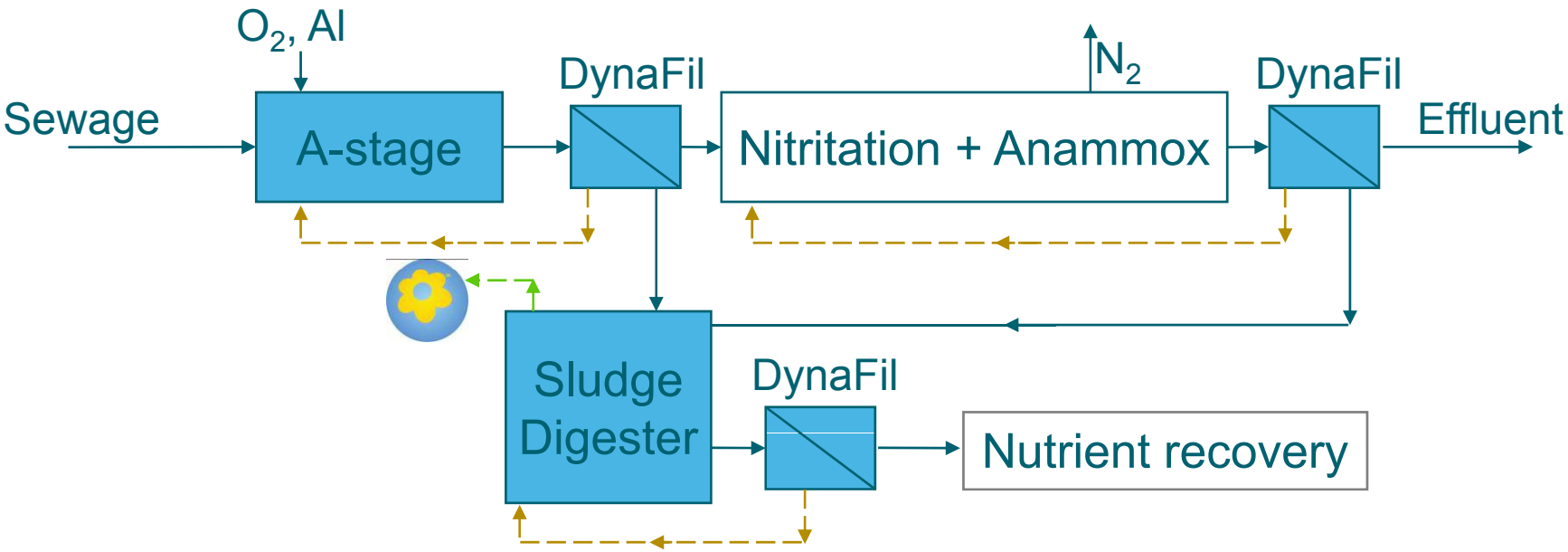
Total Concept DynaFil



This presentation:
- Optimized A-stage: existing AB systems
- discussion

Energy in the Urban Water Cycle

Heat
47,890 TJ/y
94 W/cap
27 °C

Heat exchangers potential
15,903 TJ/y
31 W/cap

Potential energy output
13,802 TJ/y
25.7 W/cap
17 W/PE

H_2O 25/26 (2010)47-51
En 11(2011) 34-36

Drinking water
789 Mm^3/y
10 °C

3,550 TJ/y
6.9 W/cap

Sewage
1,928 Mm^3/y
COD 946.039 t/y
1,909 TJ/y
3.7 W/cap

WWTP

Potential heat recovery
40,353 TJ/y
79 W/cap
15→10 °C

Domestic wastewater
789 Mm^3/y

Industry
Rainwater
Groundwater
1,139 Mm^3/y

Energy input
8,147 TJ/y
15.9 W/cap
10.6 W/PE

7,242,000 Households
2.24 cap/household

24,414,000 PE
352 WWTPs

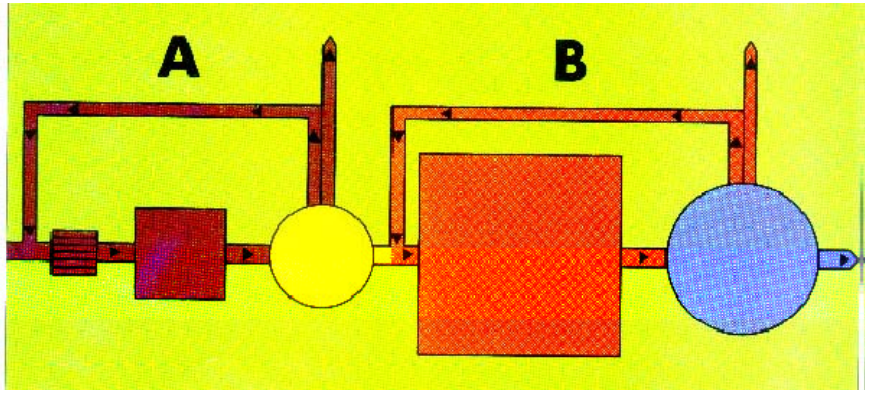
KWR Watercycle Research Institute

wml Limburgs drinkwater

waternet

AB-process

- Adsorption-Belebung (Bohnke 1977)
- Two-stage system
  - High loaded A-stage
    - >2kgBOD/kg MLSS.day
    - Max. 30 min. residence time
    - 50-70% BOD removal
  - Low loaded B-stage
    - ±0.2kgBOD/kg MLSS.day
- Two settling tanks
- Separate sludge return



Challenges and questions

- What are the optimal process conditions in an A-stage for maximum collection of organics (inventory AB-processes)?
- What is the relation between bioconversion and flocculation characteristics?
- How much COD is converted to sludge and what is the DS content of the sludge?
- What is the influence of flocculation/coagulation?
- What is the influence of chemical P-removal?

Goal

- Gain insight in optimal A-stage process conditions (residence time/aeration/(chemical)additions)
  - Inventory existing AB-systems and literature
  - Lab tests when necessary
  - Pilot
- *Increase the knowledge of the process aspects that are important for optimal performance for maximum COD-concentration*

AB processen : inventarisatie

-5 zuiveringen in Nederland
-Duitsland
-Oostenrijk: e.g. Salzburg, Strass
-US: e.g. Washington
-Spanje
-China ?

Aanpak van de inventarisatie
-Vragenlijst, jaargegevens 2010
-Bezoek en bespreking vragenlijst NL
-Via via conctacten in buitenland

Vragen?

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