20 June 2025

#EU GREEN WEEK

EU Green Week Partner Event

Sludge treatment using reed bed system at WWTP Jastrebarsko,

Speaker: Wanda Plačko, process technologist

WASTEWATER AS A RESOURCE:
REGIONAL WORKSHOP ON
SEWAGE SLUDGE MANAGEMENT
AND ENERGY EFFICIENCY

DANUBE REGION strategy Water Quality

ICPDR IKSD
International Commission for the Protection of the Danube River
Internationale Kommission zum Schutz der Donau

RIKO

Basic WWTP Information

Location: Jastrebarsko City, Croatia

WWTP age: 3 years

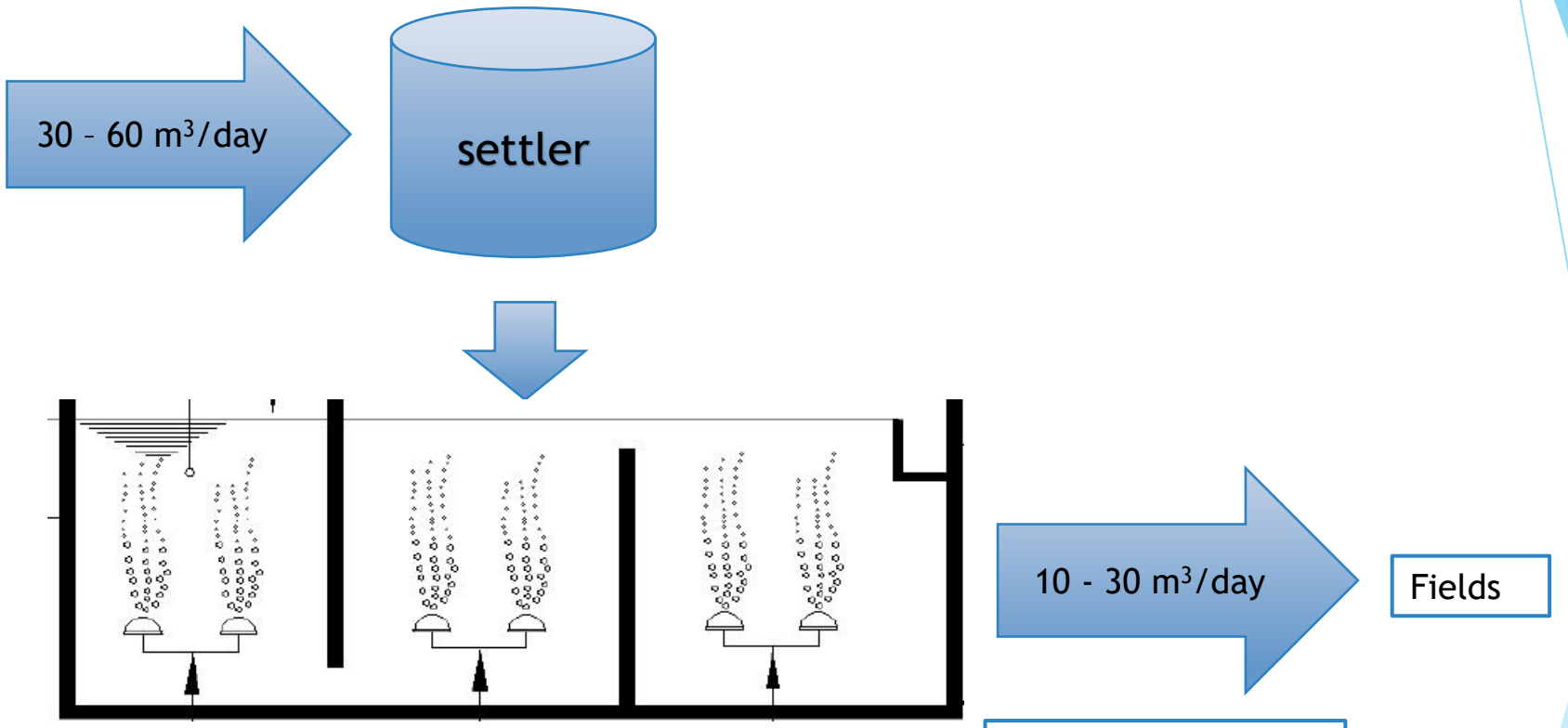
Capacity: 14 965 PE

Plant type: SBR technology

Total wastewater flow: cca. 4500 m^3/day

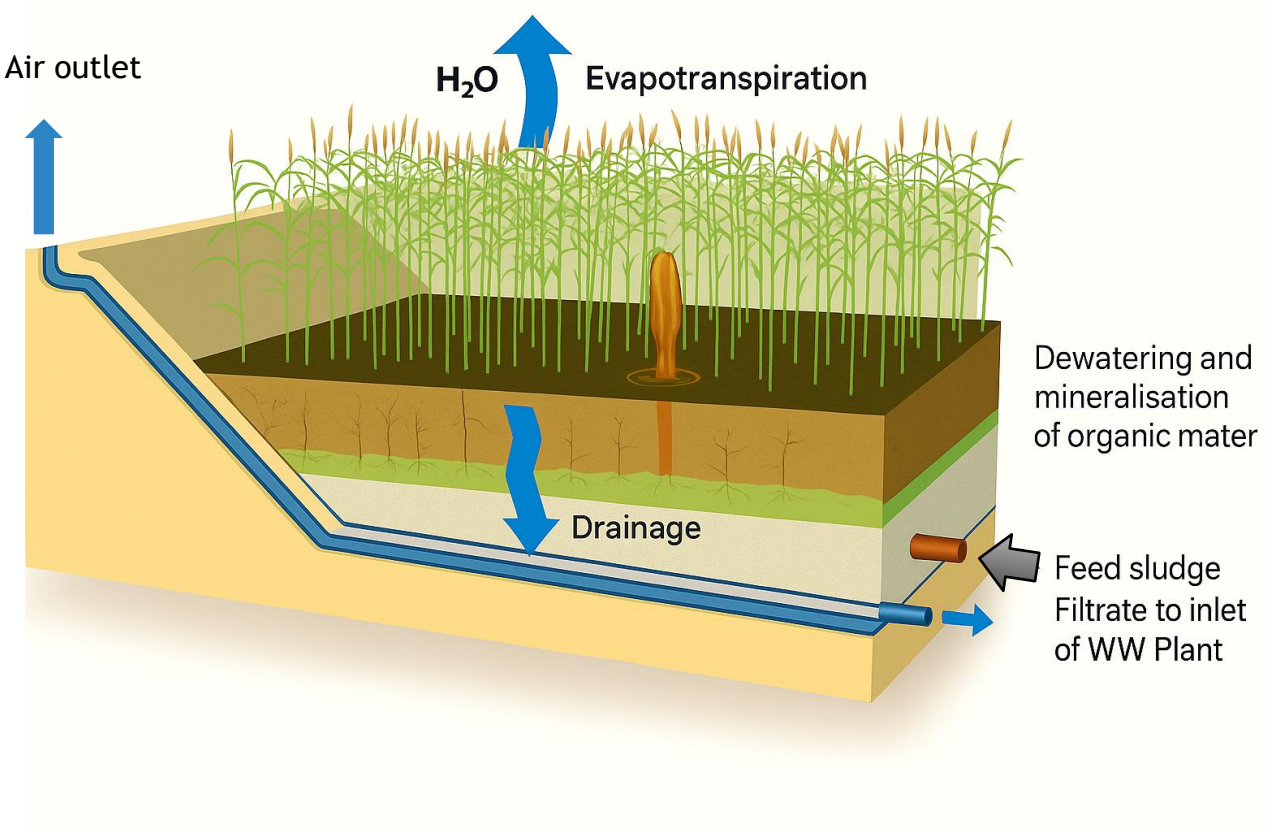
Load: cca. 200 mg O_2/L COD

Sludge Generation and Stabilization Process



#EUGREENWEEK

Waste Sludge Management Using Reed Beds



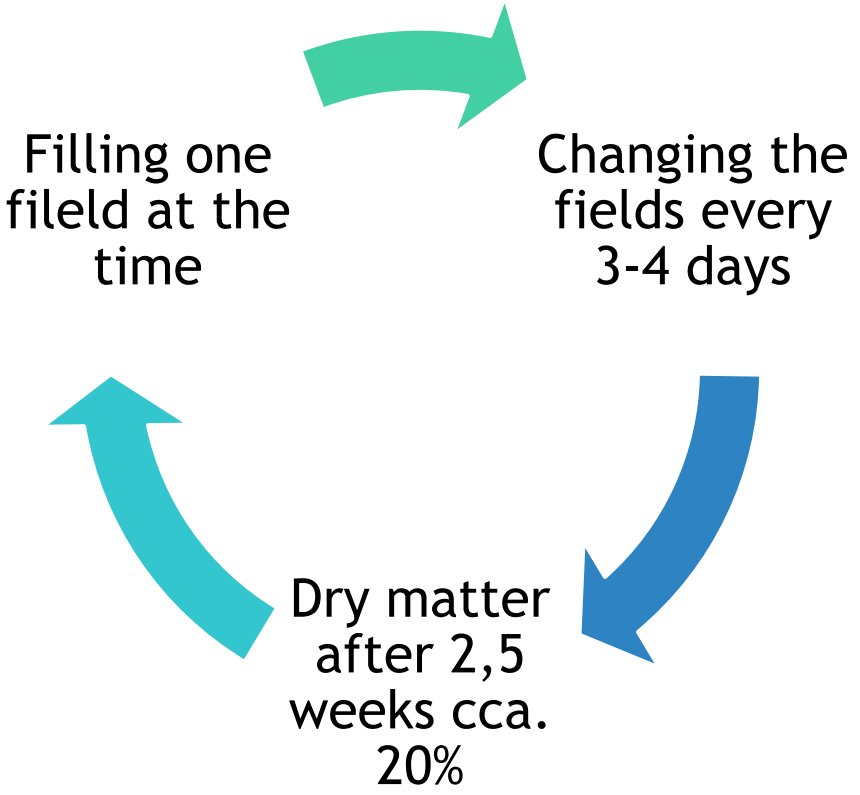
#EUGREENWEEK

Field Design and Structure

- Number of fields: 6
- Area of one field: 750 m^2
- Structure: foil, gravel, geotextile, piping
- Plants: Reeds (*Phragmites australis*)
- Role of reeds: removal of exess water and harmful contaminants, stabilization

#EUGREENWEEK

Field Filling Process



Advantages of the Reed Bed System

- Long operational lifespan (8–10 years)
- Low operational costs
- No chemical requirements
- Environmentally friendly solution

Problems and Challenges

- Estimation of sludge load
- Troubleshooting of drainage functionality
- Requires a large surface area
- Weeds and animals

Weeds and animals

Future Challenges and Plans

- Final disposal of stabilized sludge after 8 – 10 years
- Required analysis for categorization of stabilized sludge
- Sludge management during the emptying of the fields
- Recovery options: as fertiliser

#EUGREENWEEK

Conclusion

The reed bed system is one of the easier solutions for waste sludge management

Need for maintenance and monitoring

Timely planning of future steps

Thank you for your attention!