Waterfactory Asten

Aquatech 4 november 2021

veilig voldoende schoon water

The challenge and opportunity in Brabant

- ❑ Drinking water sources are under pressure
- ❑ (deep) groundwater is used for low value applications
- ❑ Draught in many places
- ❑ We find new more and more new emerging pollutions

Our organisation has high ambition for the removal of these emerging concerns.

So the moment is there to reuse our WWTP effluent

WWTP Asten the ideal location for water reuse

Industry with large (drinking) water use and sustainability ambitions

Water need for greenhouses for several crops (edible and non-edible)

Gebiedsoverzicht

Unused heat net suitable for clean water transport

Kaart onbenut warmtenet

veilig voldoende schoon water

The idea

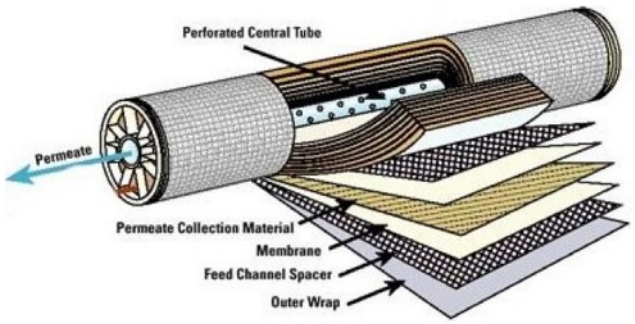
Traditionel water reuse concepts from WWTP’s are to expensive and to “clean”

Combination **capillairy Nanofiltration en UV/H_2O_2 treatment**

A research for the right quality for the right price

The technology

From: spiral wound (sheets)

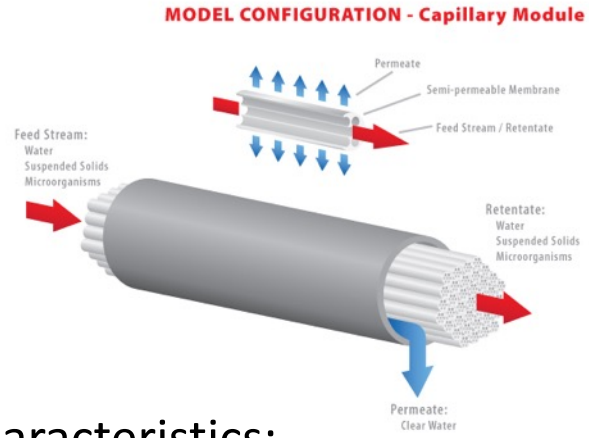


characteristics:

- ❑ High energy costs
- ❑ Fouling difficult to handle
- ❑ High TCO

<u>Unsuitable for WWTP Effluent</u>

To: capillary (straws)

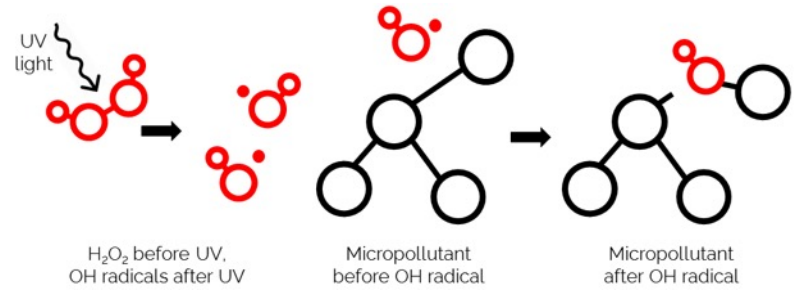


characteristics:

- ❑ Low energy and chemicals usage
- ❑ Fouling easy to remove
- ❑ Low TCO

<u>Suitable for WWTP rwzi Effluent</u>

With learning from:



<u>Low transmission in WWTP effluent</u>

<u>Formula for success</u>

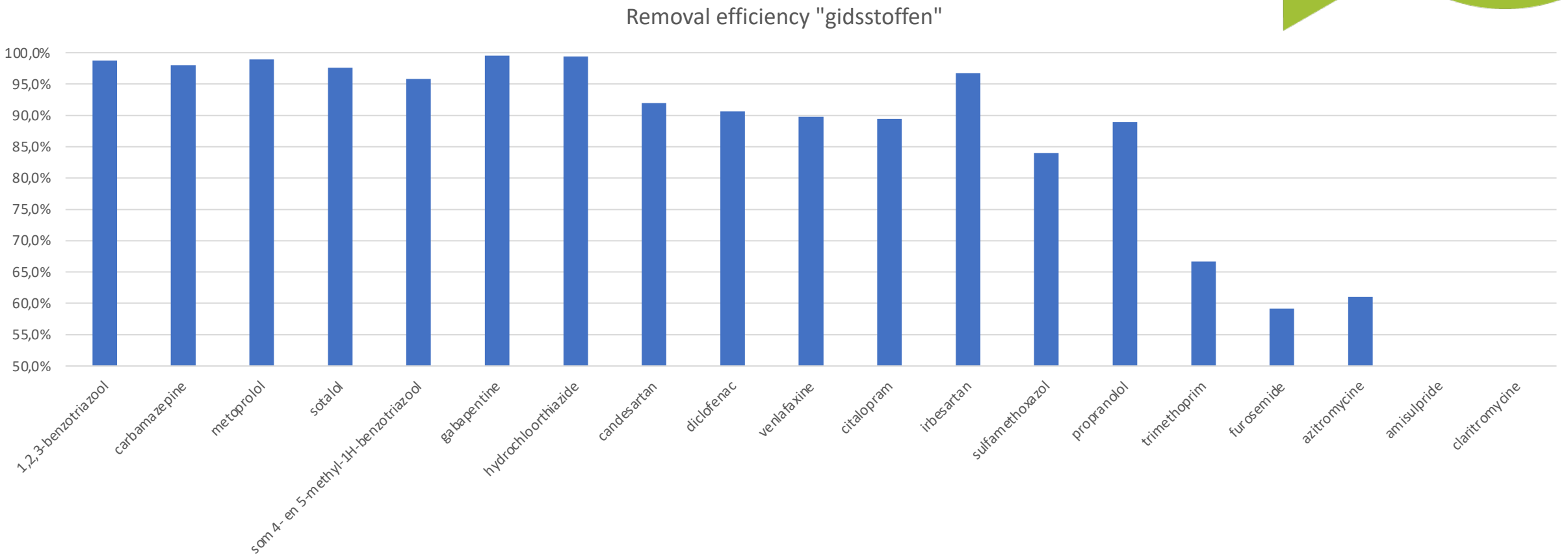
First Results part 1

- Strainer is needed for protection membrane
- Rain weather of influence performance strainer and membrane
- Membrane shows stable performance
- Transmission goes up to more than 90%

- Effect UV (example Metformine)

Unit	DNF 80	UV 5.000 J/m2	UV 10.000 J/m2	UV 15.000 J/m2
ug/l	2,07	1,30	0,65	0,17

First Results part 2



* All gidsstoffen below detection limit. Except for azitromycine with doses UV below 15.000 J/m2

** amisulprid and claritromycine untraceable in WWTP effluent

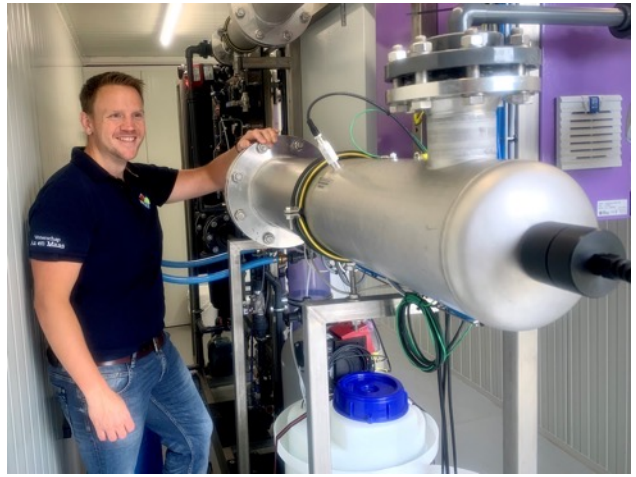
Continuation of the research

		2021														2022																				
	Week	40	41	42	43	44	45	46	47	48	49	50	51	52	53	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Dag	1-okt	8-okt	15-okt	#####	29-okt	5-nov	12-nov	#####	26-nov	3-dec	10-dec	#####	#####	31-dec	7-jan	14-jan	#####	28-jan	4-feb	11-feb	18-feb	25-feb	4-mrt	11-mrt	#####	#####	1-apr	8-apr	#####	#####	29-apr	6-mei	13-mei	#####	27-mei	
Fase 1	Aanpassing installatie																																			
Fase 2.1	Indraaien membraan 400 dalton																																			
	Typering membraan																																			
	continue bedrijf + metingen																																			
Fase 2.2	Indraaien membraan 800 dalton																																			
	Typering membraan																																			
	continue bedrijf + metingen																																			
Fase 2.3	Indraaien membraan 1200 dalton																																			
	Typering membraan																																			
	continue bedrijf + metingen																																			
Fase 3	Rapportage en communicatie																																			

- Testing of 3 membranes: 400, 800 and 1200 Dalton
- Testing of 3 UV doses: 5.000, 10.000 and 15.000

Thank you for your attention!

Rob van de Sande
Waterschap Aa en Maas
rvandesande@aaenmaas.nl



stowa

Rijkswaterstaat
Ministry of Infrastructure and Water Management

Tackling Micropollutants in Wastewater
Approaches on Implementation and Innovation in Europe and The Netherlands

November 3 and 4 2021
Aquatech Amsterdam