



LL Flanders – case RO De Blankaart

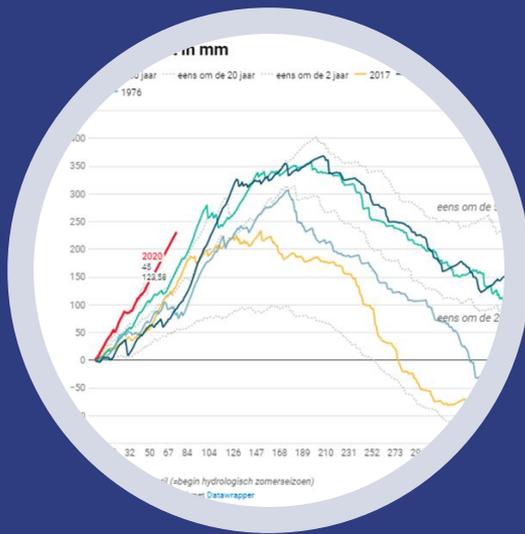
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¹ De Watergroep

b-watersmart.eu



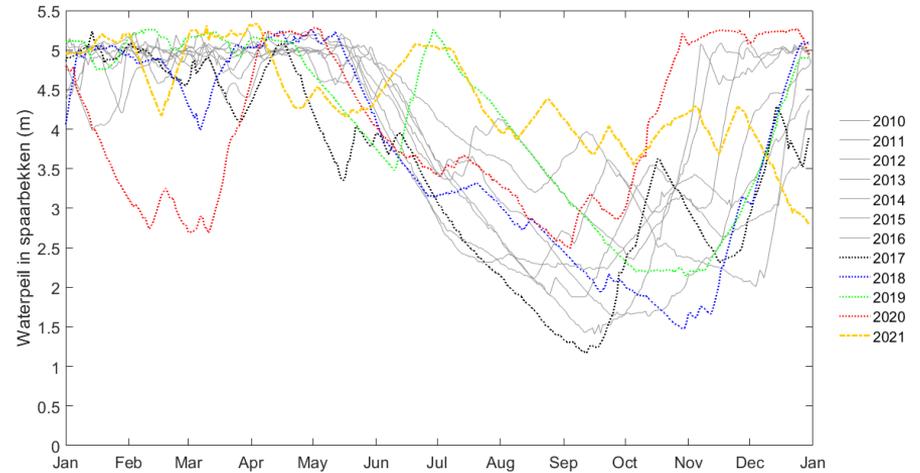
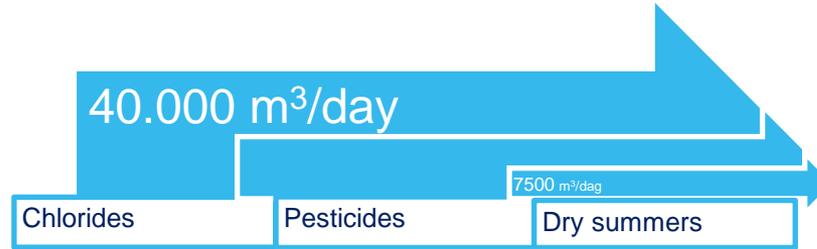
De Watergroep
WATER. VANDAAG EN MORGEN.



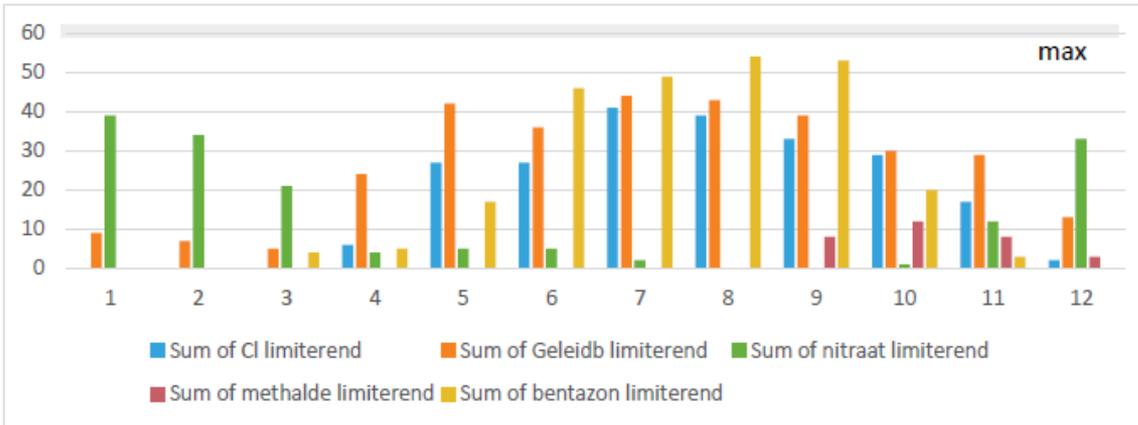
Changes need action

Local water challenge

WPC De Blankaart



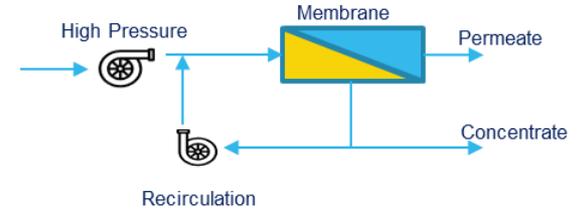
Raw water deterioration



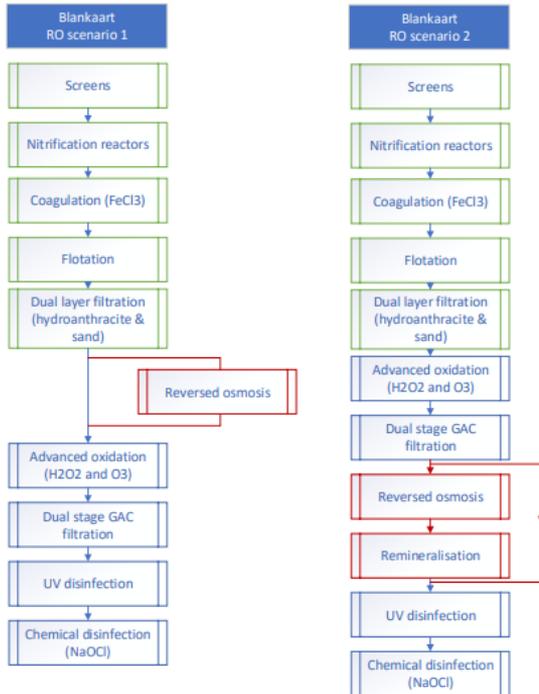
Number of weeks a compound is limiting for raw water intake over a 15 y period

Increase performance

- RO as barrier
 - Try to overcome the raw water problem
 - Remove Chlorides
 - Remove OMP's
 - Make it as water efficient as possible (> 85 % recovery)
 - Low energy consumption
 - CCRO?

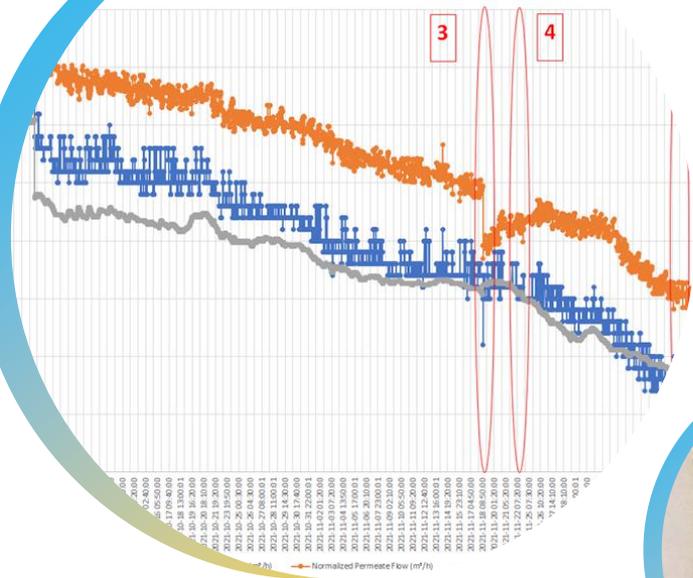


Where to put?



- Downstream of GAC filters vs sand filters
- Shielding of GAC possible?
- Fouling (biofouling and clogging)?

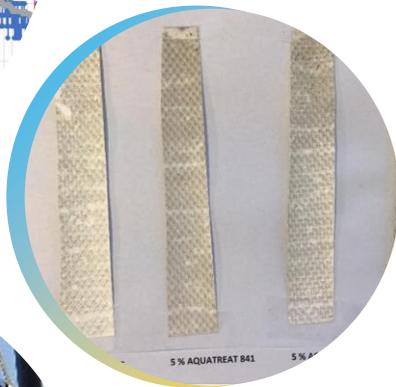
Parameters	Scenario 1	Scenario 2
Turbidity	~ OK	OK
TOC	Too high	OK
SDI ₁₅	~ OK	OK
TSS	/	/
Fe ³⁺	Too high	~ OK
Manganese	Too high	Too high
Silica	OK	OK
Free chlorine	Too high	OK
Temperature	OK	OK
pH	OK	OK



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Downstream of GAC



First RO test (1m3/h)

- Permeate flow declined continuously
- Also after CIP (NaOH and citric acid)
- Membrane autopsy was done
- No manganese oxides (since not removed by acid cleaning, while manganese was)

CCRO before the GAC

- 10 m³/h CCRO installation
- Protected by cartridge filter (5 µm) and chemicals (H₂SO₄, anti-scalents, SBS)
- Goals
 - > 85% recovery
 - stable operation
 - shielding of GAC from OMP's and PFAS
 - low energy consumption



Key Data B-WaterSmart

Partners: 36 organisations

Total Budget: **17.3 M€**

Total EC contribution: **15.0 M€**

EC H2020 GA Number: **869171**

Duration: **Sep 2020 – Aug 2024**

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B-WaterSmart project partners





This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 869171. The publication reflects only the authors' views and the European Union is not liable for any use that may be made of the information contained therein.