



**Innovative water technology**

Design • Build • Finance • Operate

# Partner in sustainable water solutions

- Tailor-made water
- Demineralised water
- Industrial water
- Purification and reuse of waste water
- Research
- Advice



# NORTH WATER

**Reliable and professional partner for the supply of industrial water and for the processing of waste water on the basis of tailor-made installations.**

North Water is a joint venture of Evides Industriewater and Waterbedrijf Groningen. These companies have combined their expertise and experience in the field of water for an optimum commitment to the industry.

## **Our clients**

North Water provides solutions for problems concerning water treatment and waste water purification for businesses in sectors which include a.o. the (petro-)chemical industry, the metal industry, the food industry, agro business and the energy sector. The marketing area of North Water is the Northern Netherlands and Northern Germany.

## **Tailor-made solutions**

There is an increasing demand from the market for custom built work in the area of water. As the water partner for industry, North Water maps out its client's entire water chain and subsequently offers to provide them with a long-term tailor-made solution. North Water produces and delivers the desired quality of industrial water. Also North Water is active in the field of waste

water purification. North Water takes care of the design, the construction and the management of the plants and, if required, the financing too (DBFO).

## **Reliable partner**

At the basis of the relationship with our clients are partnership, reliability, certainty of supply, sustainability and transparency. The basis for the cooperation is a win-win situation. By entering a long-term contract with North Water our clients can avoid direct investment in an activity which is not a part of their core business. This creates a win-win situation for both parties.

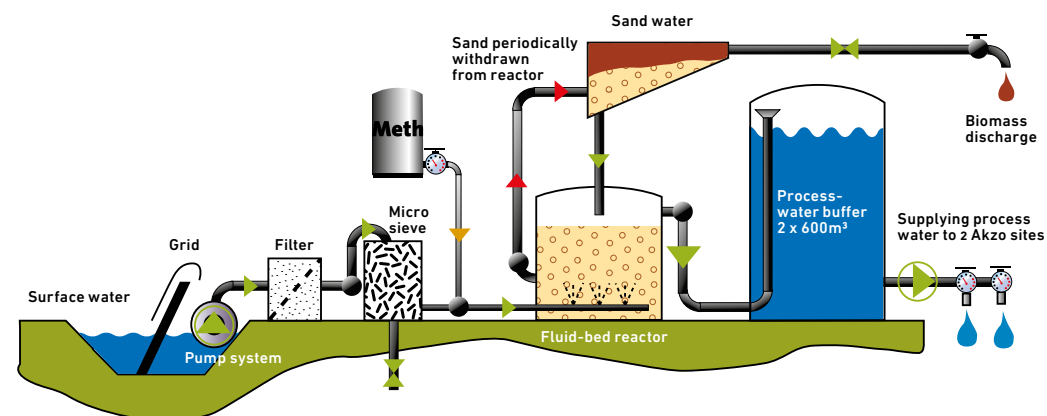
## **Experience**

North Water has more than 10 years experience in Design Finance Build and Operations, and is proud to deliver 17 Mm3 industrial water and treating 35.000 PE of Wastewater on 6 different locations. The organisation of North Water is based upon an management from both companies and an dedicated crew for maintenance and operations.



# AKZO SALT

Sustainable water plant creates  
oxygen-free water for Akzo Salt



## Specifications

### Process water quality

Parameter	Unit	Specification
Nitrate ( $\text{NO}_3\text{-N}$ )	mg/l	< 1
Nitrite ( $\text{NO}_2\text{-N}$ )	mg/l	< 0.1
Oxygen ( $\text{O}_2$ )	mg/l	< 0.1
Suspended solids (SS)	mg/l	< 25
Methanol ( $\text{CH}_3\text{OH}$ )	mg/l	< 0.1

### Technical details

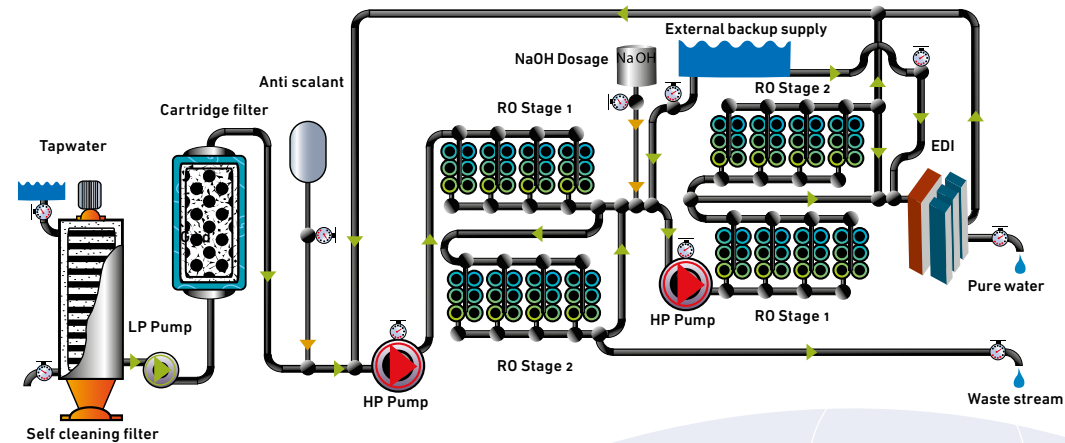
Total production capacity	Mm <sup>3</sup> /year	10
Hourly capacity	m <sup>3</sup> /hour	1,330





# NUON (UNTIL 2016)

Sustainable production of Ultra-Pure Water by using membrane and Electro-De-Ionisation technology



## Specifications

### Process water quality pure water

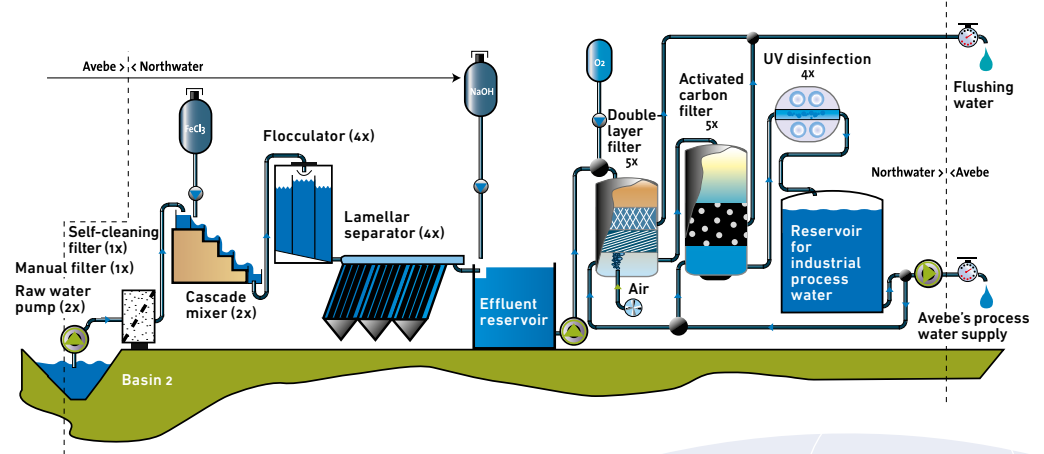
Parameter	Unit	Specification
Conductivity	$\mu\text{S}/\text{cm}$	< 0.1
Acidity	pH	6.5-7.0
Silicon	mg/l	< 0.02
Sodium + Potassium	mg/l	< 0.01
Iron	mg/l	< 0.02
Total organic compound	$\mu\text{g}/\text{l}$	< 50
Chloride	mg/p	< 0.03

### Technical details

Total production capacity	$\text{Mm}^3/\text{year}$	0.2
Hourly capacity	$\text{m}^3/\text{hour}$	50

# AVEBE

## Sustainable purification of surface water for AVEBE



## Specifications

### Process water quality

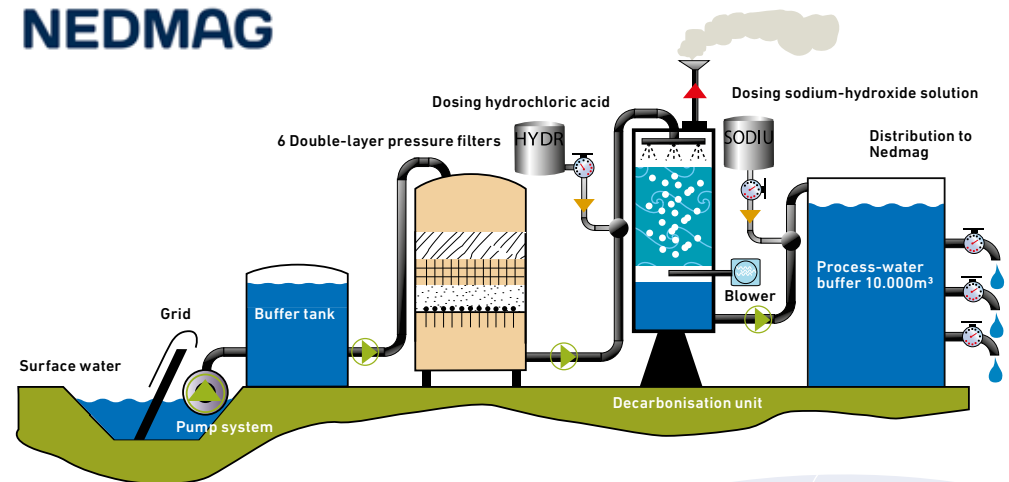
Parameter	Unit	Specification
Acidity	pH	6.9 - 9
Oxygen content	mg/l	> 5
Iron content	mg/l	< 0.05
Manganese content	mg/l	< 0.03
Turbidity	NTU	< 2
Colony count 22 °C	CFU/l	< 100

### Technical details

Total production capacity	Mm <sup>3</sup> /year	3.5
Hourly capacity	m <sup>3</sup> /hour	750

# NEDMAG INDUSTRIES

Sustainable process water  
for Nedmag Industries



## Specifications

### Process water quality

Parameter	Unit	Specification
Iron	mg/l	< 10
Manganese	mg/l	< 0.3
Suspended solids	mg/l	< 10
Acidity	pH	9.5 ± 0.5
Carbon dioxide	mg/l	< 15
Carbonate	mg/l	< 10
Bicarbonate	mg/l	< 10
Turbidity	FTU	< 0.1

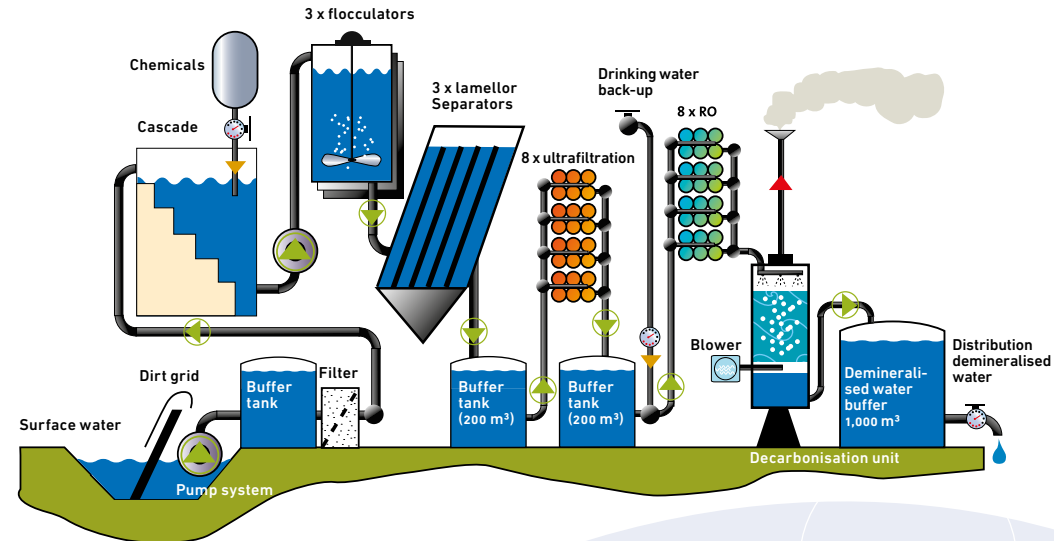
### Technical details

Total production capacity	Mm³/year	4.0
Hourly capacity	m³/hour	540



# KISUMA CHEMICALS

Sustainable purification of surface water to Demineralised water quality by using membrane technology



## Specifications

### Process water quality

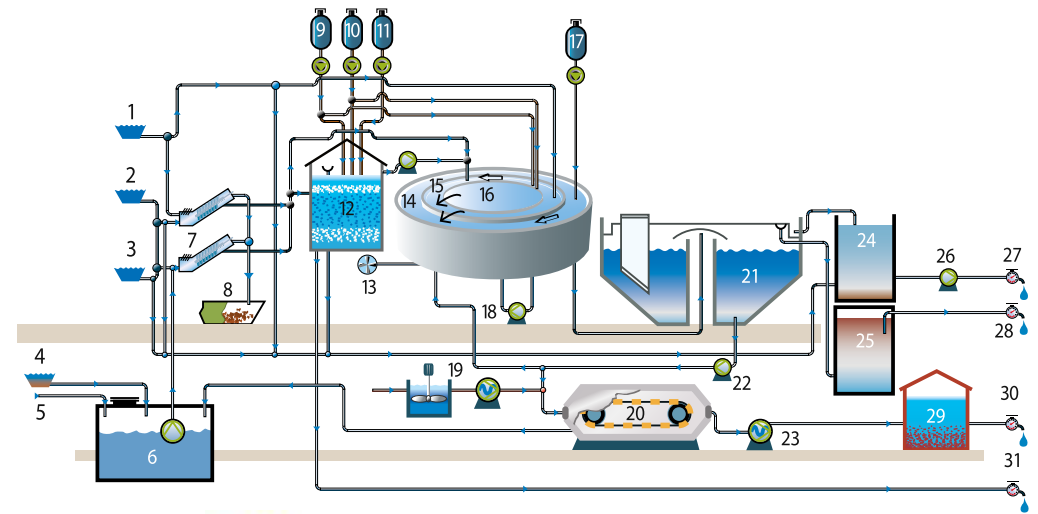
Parameter	Unit	Specification
Acidity	pH	5 - 8
Turbidity	FTU	< 0.1
Conductivity	µS/cm	20
Iron	mg/l	< 0.01
Chloride	mg/l	< 5
Sulphate	mg/l	< 10
Magnesium	mg/l	< 1
Calcium	mg/l	< 1
Sodium	mg/l	< 5
Carbon dioxide	mg/l	< 30

### Technical details

Total production capacity	Mm³/year	2.0
Hourly capacity	m³/hour	250

# SALINE WASTEWATER TREATMENT PLANT (SWWTP) DELFZIJL

Sustainable processing of (saline) wastewater by using the local sewer system connected to a central treatment plant



## Specifications

### Sustainable processing of wastewater

Purification data	Unit	Specification
Number of companies connected		> 30
Activated sludge system	PE	35,000 (Pollution Equivalent)
Daily peak of contaminated water	PE	60,000
Capacity of equalization tank (gross)	m <sup>3</sup>	2,500
Capacity of activated sludge tank (gross)	m <sup>3</sup>	6,700

### Technical details

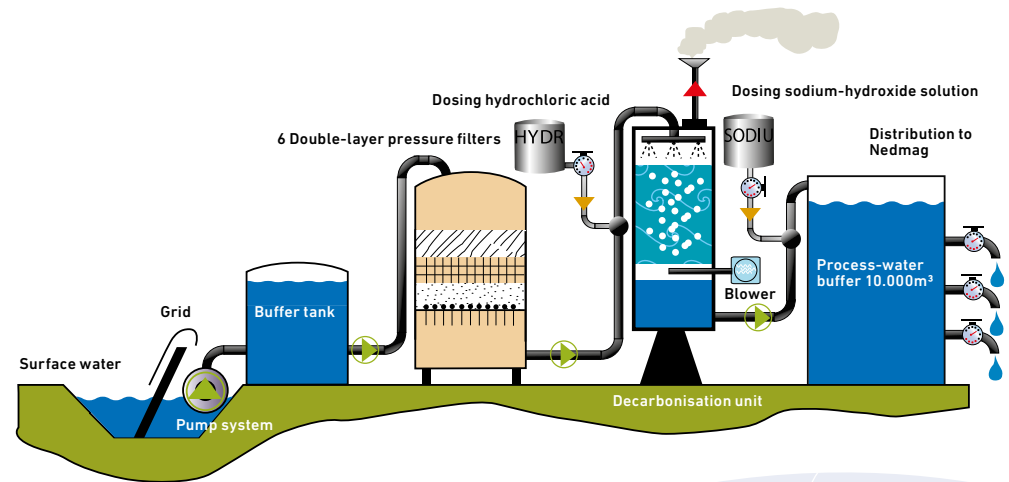
Total hydraulic capacity	Mm <sup>3</sup> /year	2.0
Hourly hydraulic capacity	m <sup>3</sup> /hour	250

1 influent other | 2 influent west | 3 influent east | 4 drainage area | 5 landings by truck | 6 inlet works | 7 screen | 8 container | 9 Caustic soda | 10 Hydrochloric acid | 11 nutrients | 12 equalization / buffer tank | 13 aerator | 14 facultative zone | 15 denitrification zone | 16 Selector | 17 poly aluminum chloride | 18 recirculation pump | 19 Poly electrolyt unit | 20 dewatering belt | 21 secondair settling tank | 22 returnsludge pump | 23 sludge pump | 24 effluent pit | 25 scum removal pit (floating removal settling tank) | 26 effluent pump | 27 effluent discharge (Zeehavenkanaal) | 28 scum removal by car | 29 sludge buffer | 30 sludge discharge by car | 31 Calamity overflow



# GREEN DATA PORT

Sustainable cooling water voor  
Data Center Eemshaven



## Specifications

### Process water quality cooling water

Parameter	Unit	Specification
Chemical oxygen demand	mg/l	< 40
Total nitrogen	mg N/l	< 1.0
Total phosphate	mg P/l	< 200
Total suspended solids	mg/l	< 6
Sulphate	mg SO <sub>4</sub> /l	< 32
Chloride	mg/p	< 200

### Technical details

Total production capacity	Mm³/year	10
Hourly capacity	m³/hour	2,000

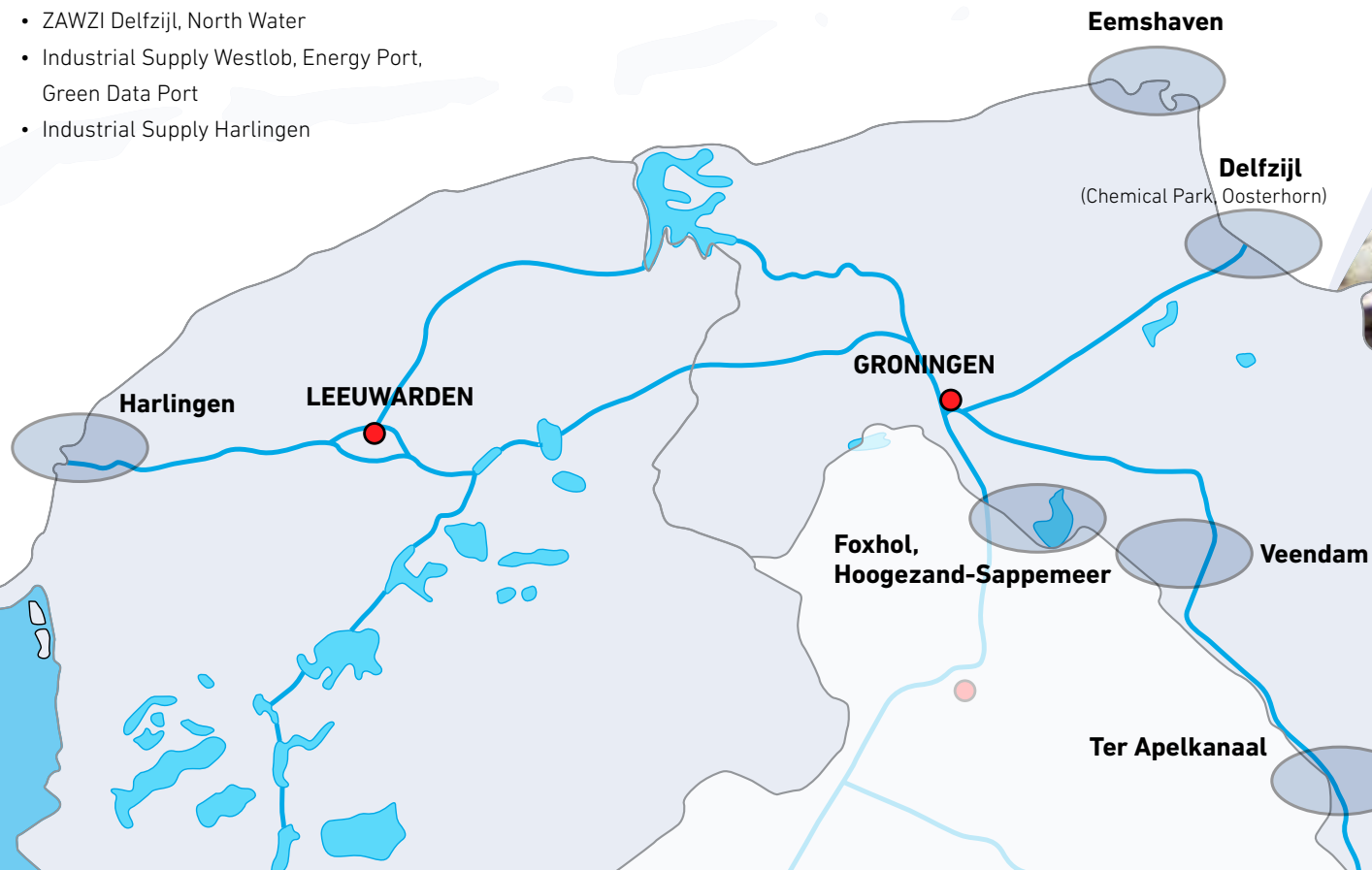
# KEY FIGURES

- Industrial water: 17 Mm<sup>3</sup>
- Waste water: 30,000 pe
- Industrial water locations: 7

## Industrial areas

### North Water Customers

- AkzoNobel Salt
- Kisuma Chemicals
- Nedmag Industries
- Avebe TAK
- ZAWZI Delfzijl, North Water
- Industrial Supply Westlob, Energy Port, Green Data Port
- Industrial Supply Harlingen





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#### **You'd like to know more?**

If you would like to have more information regarding the solutions which North Water can provide, contact us at:

#### **Physical address**

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North Water is a joint venture of  
Waterbedrijf Groningen and Evides Industriewater