

Nantra™

Chemical Free Water Treatment

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Extracting water

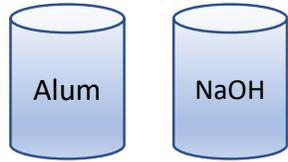


Nantra™

- Think in terms of taking the water from the source
- Leave the unwanted contaminants behind
- Up to 3000 NTU surface water
- Up to 200 Hazen colour
- Bacteria, giardia, cryptosporidium up to 8 log removal
- Virus up to 4 log



Traditional Treatment Process





Suspended solids
Bacteria
Protozoa Virus
Colour
Ca, Na
Water

Suspended Solids
Bacteria
Protozoa Virus

Colour

Water, Salts

Water, Colour, Na, Ca



Nantra™UF

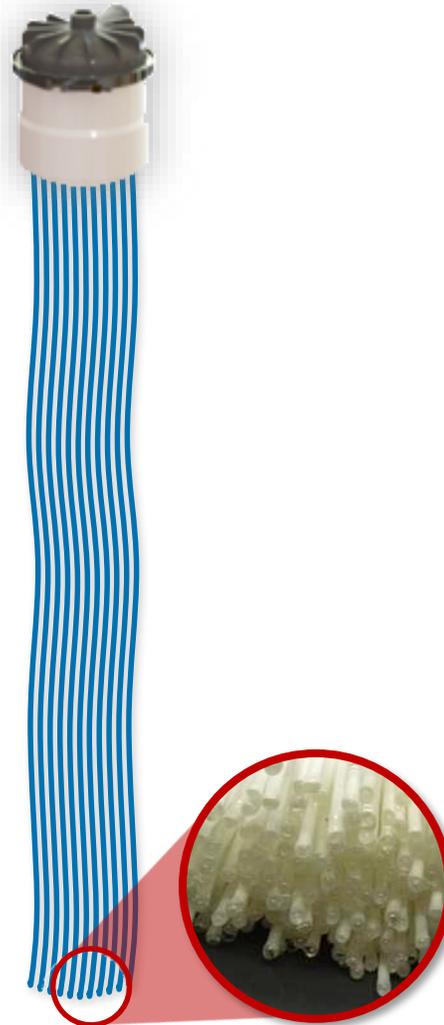


Nantra™DOC

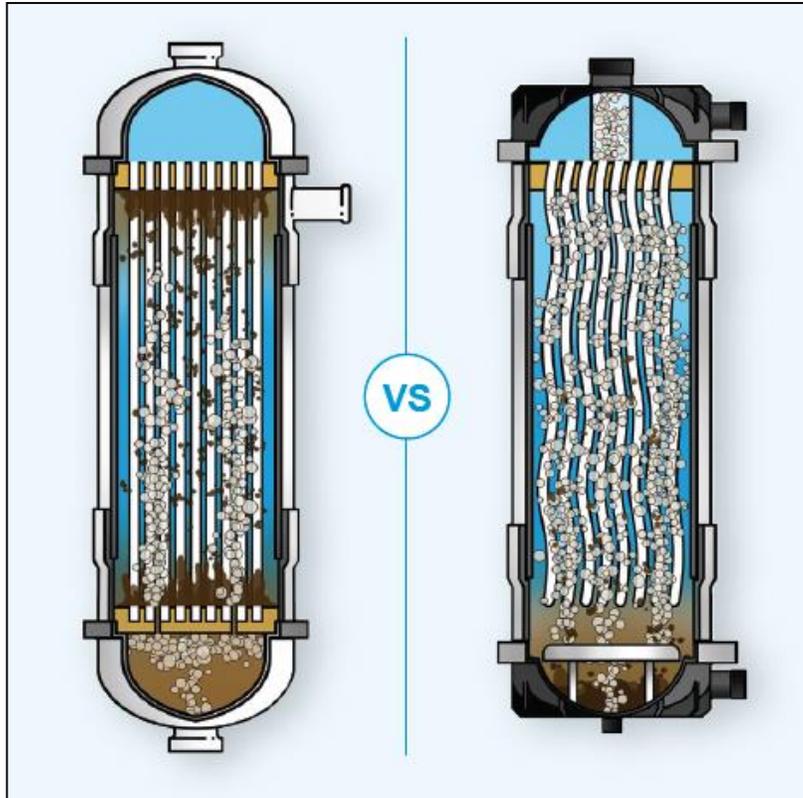


Handling High Turbidity – Nantra™ UF

- Fibres are potted at one end only.
- Free end has each individual fibre sealed off
- This is then enclosed in pressure housing.
- Incorporated into a fully automated system

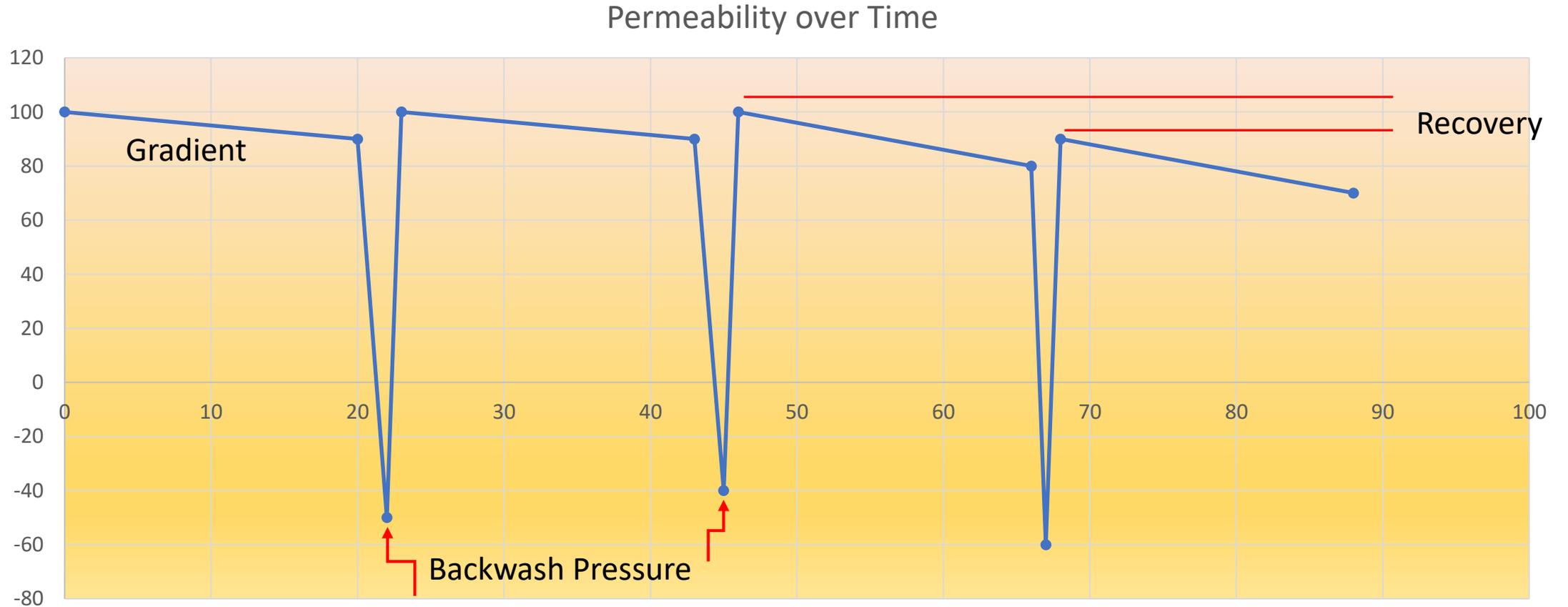


Unique Configuration



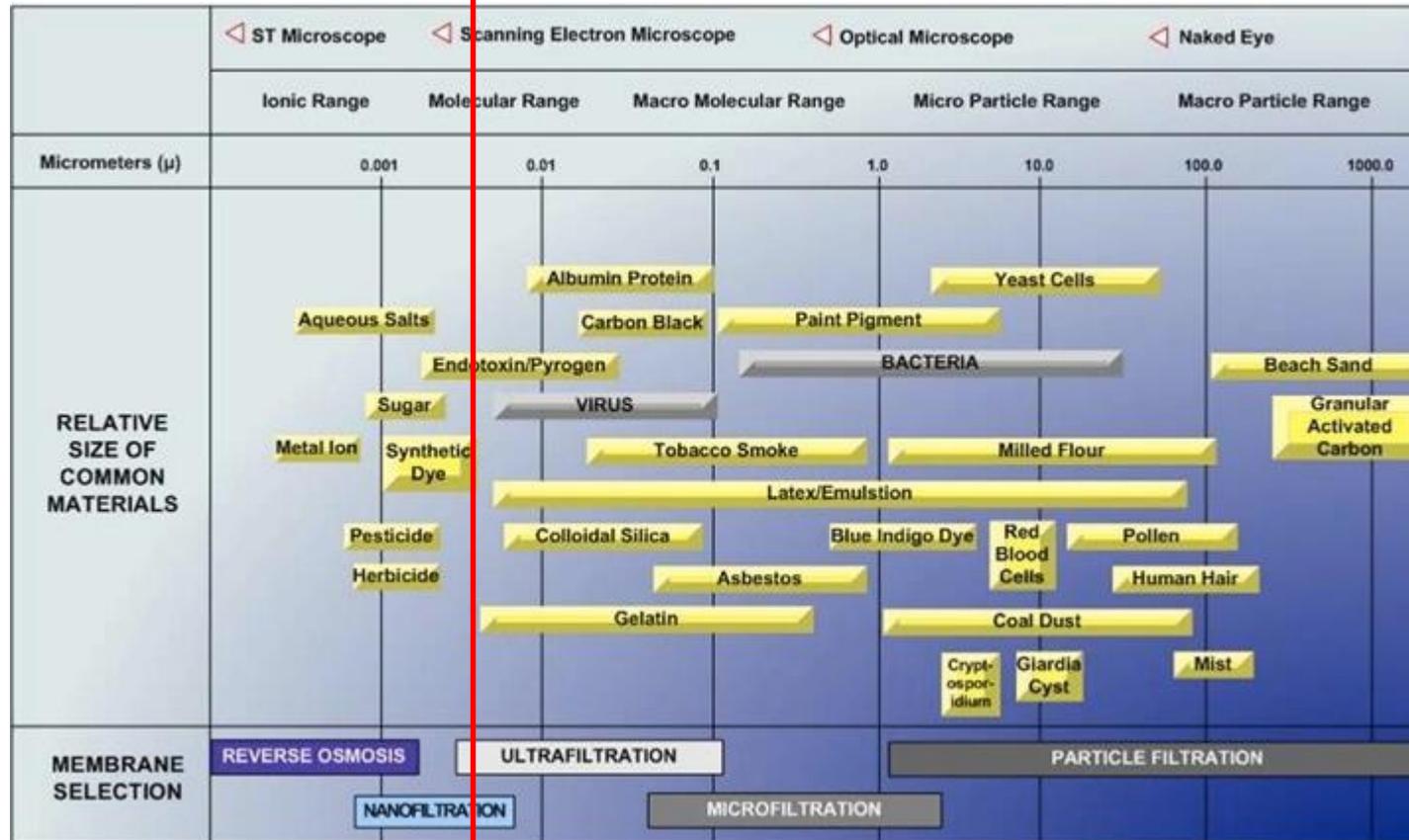
- All other UF membranes are potted at both ends
- Prevents clearing of solids
- Therefore restricts the solids level of the feed water

Smarter simple controls

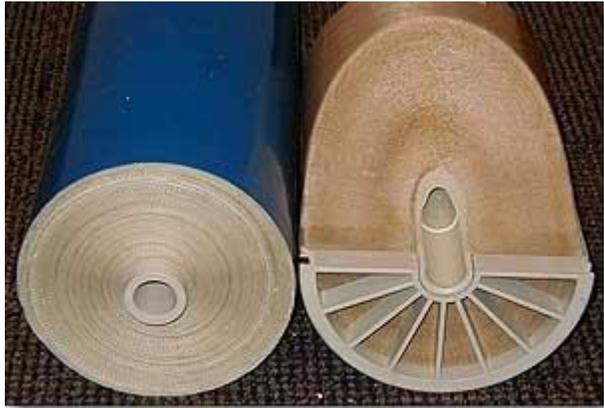




Nantra™ DOC

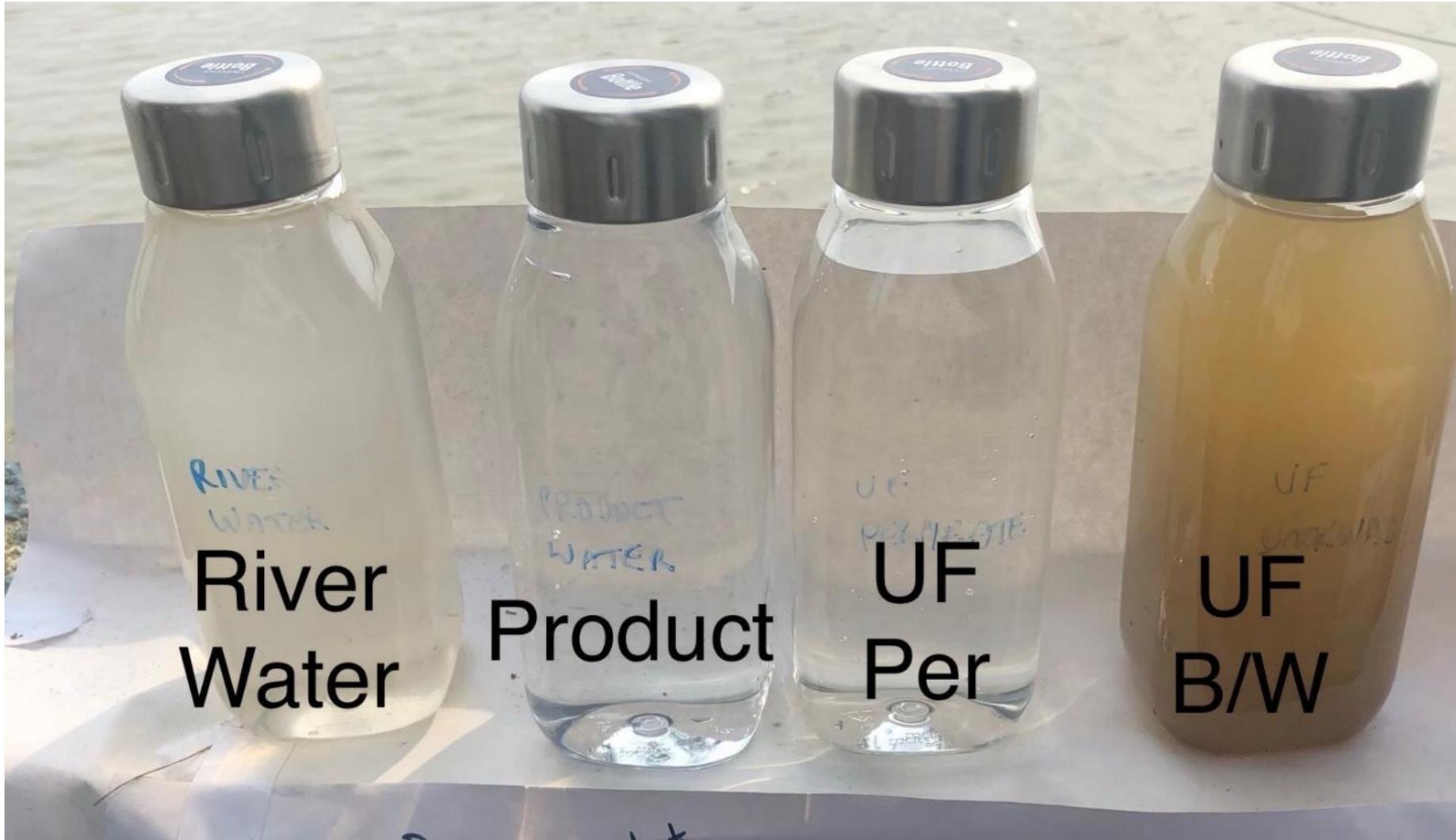


Nantra™ DOC



- High DOC rejection
- High Colour rejection
- Low Ca rejection

- Surface charge
- Hydrophilicity
- Chemistry
- Pore size
- Pore distribution



RIVER
Water
**River
Water**

PRODUCT
WATER
Product

UF
PERMEATE
**UF
Per**

UF
BACKWASH
**UF
B/W**

Actual Performance

Parameter	Design Limit	Raw Water Observed	Treated Water
Turbidity	3000 NTU	100 – 300 NTU	<0.2 NTU
True Colour	200 Hazen 500 Hazen (peat water)	30-50 Hazen	< 5 Hazen
TOC	80-90% reduction	15-20 ppm	2-4 ppm
E-coli	6 log +	3 x 10 ³ /100mL	<1/100 mL
Alkalinity	No change	100-400 ppm	No changed
Energy Consumption	0.24 kW/hrs per 10 ³	0.21 kW/hrs per 10 ³	
Pressure	Max 3 Bar, Design 1.8 Bar	1.6 Bar	

Snap Shot

Parameter	Raw Water	UF treated water	Nantra treated water
Turbidity	52 NTU	0.1 NTU	0.1 NTU
True Colour 0.45 μ	32 Hazen	28 Hazen	3.2 Hazen
TOC	16.0 ppm	14.7 ppm	2.4 ppm
E-coli	3 x 10 ³ per 100 mL	<1 per 100 mL	<1/100 mL
Alkalinity	320 ppm	320 ppm	300 ppm
Energy Consumption	0.21 kW/hrs per 10 ³		
Pressure	1.6 Bar		





With Nantra™
Chemical Free Water
Treatment:





Akvotek UF-30™

Akvotek
Emergency Water Supply Solutions
2019

Ease of use

- Treats contaminated water
- Up to 3000 NTU
- Produces safe water
 - 0.03 μ filtration
 - Chlorination Ct > 50 ppm.min
 - 6+ log bacteria removal
 - 4+ log protozoa removal
 - 4+ log virus removal
- Treats up to 30,000 L/d
- NO complex controls
 - Simple timers with spare supplied
 - Fully automated
- Generator fitted into the skid
 - 8,000 L per 1L of unleaded petrol
- Transportable
 - 0.75m x 0.75m x 2.3m
 - Fits into container and one a pallet
 - Weight is 120kg

Akvotek Emergency Water Technology UF-30

- Simple Process Outline

Robust Membrane Technology

Easy to Ship – 120kg Dry – Standard Pallet

Simple to start

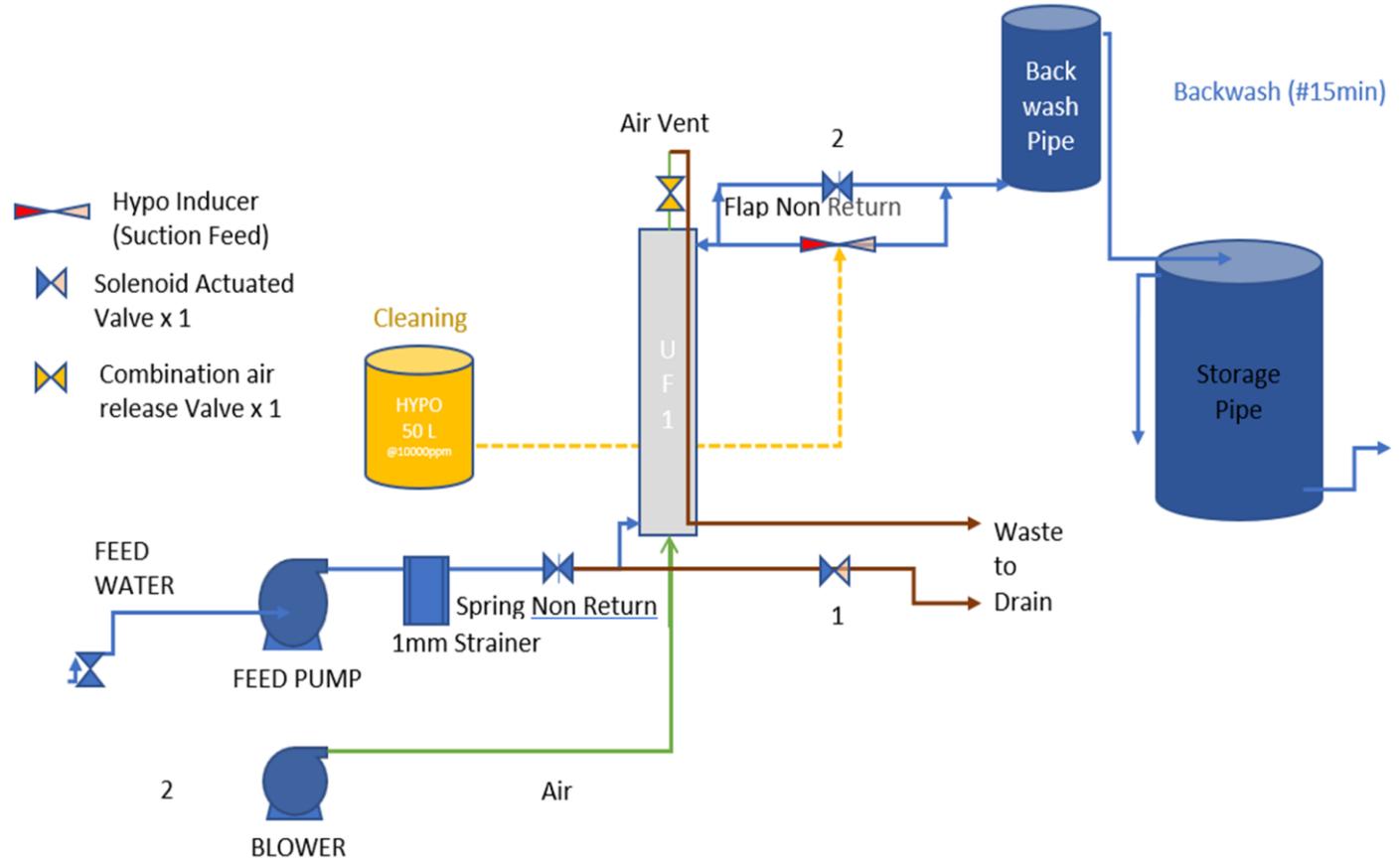
Able to treat 3000 NTU

Self Cleaning

Usable by unskilled personnel

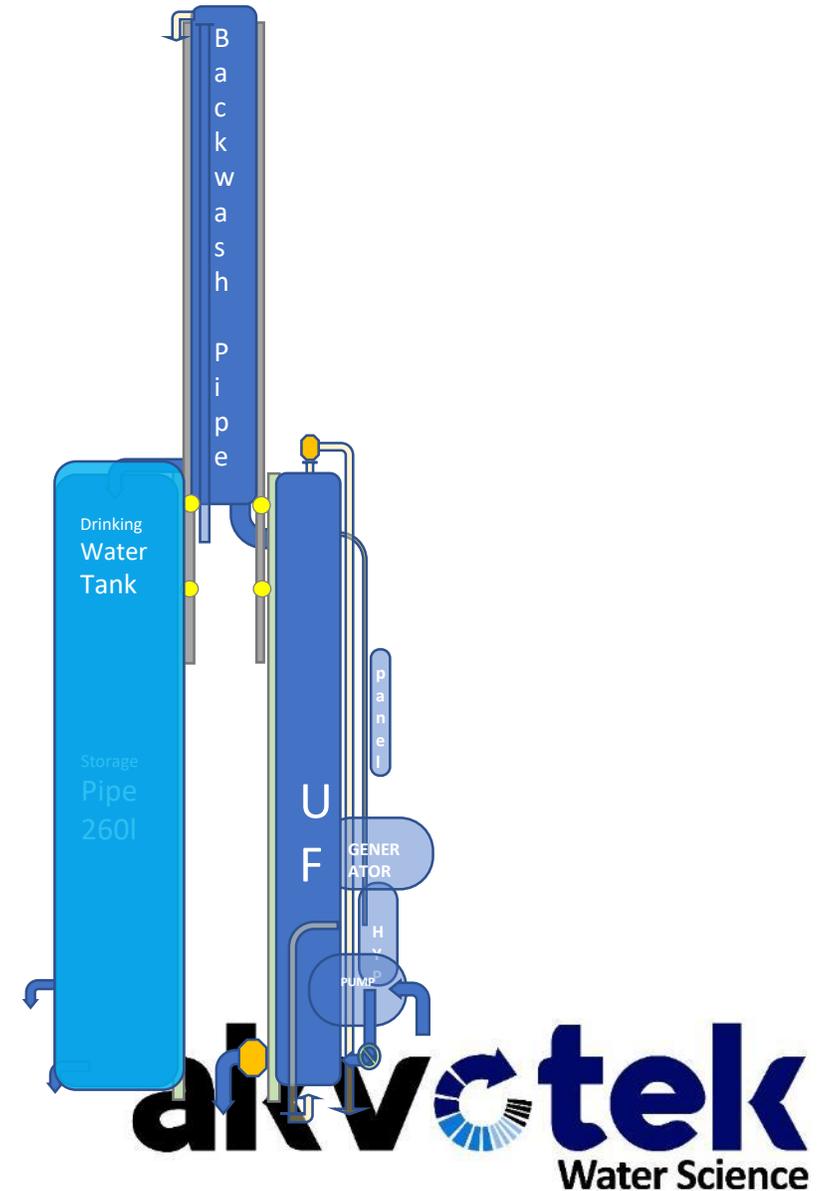
Able to produce up to 30,000 l/day

NANTRA U-30 - PROCESS OUTLINE



Assembly of UF-30 Preparation for Operation

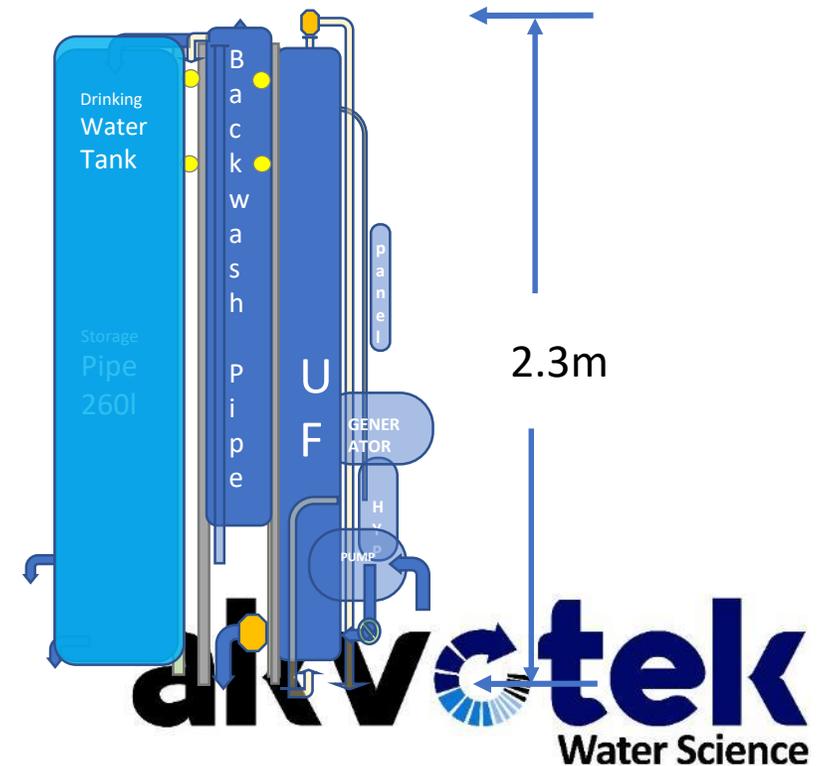
- The Skid is shipped with the backwash pipe in the lowered position
- To prepare the skid for operation:
 - Fill generator with fuel
 - Lift up the backwash pipe and secure
 - Place suction pipe in water
 - Attach product pipe (optional)
 - Press start on Control Box
- 9 hrs run time between refueling (4.5l)



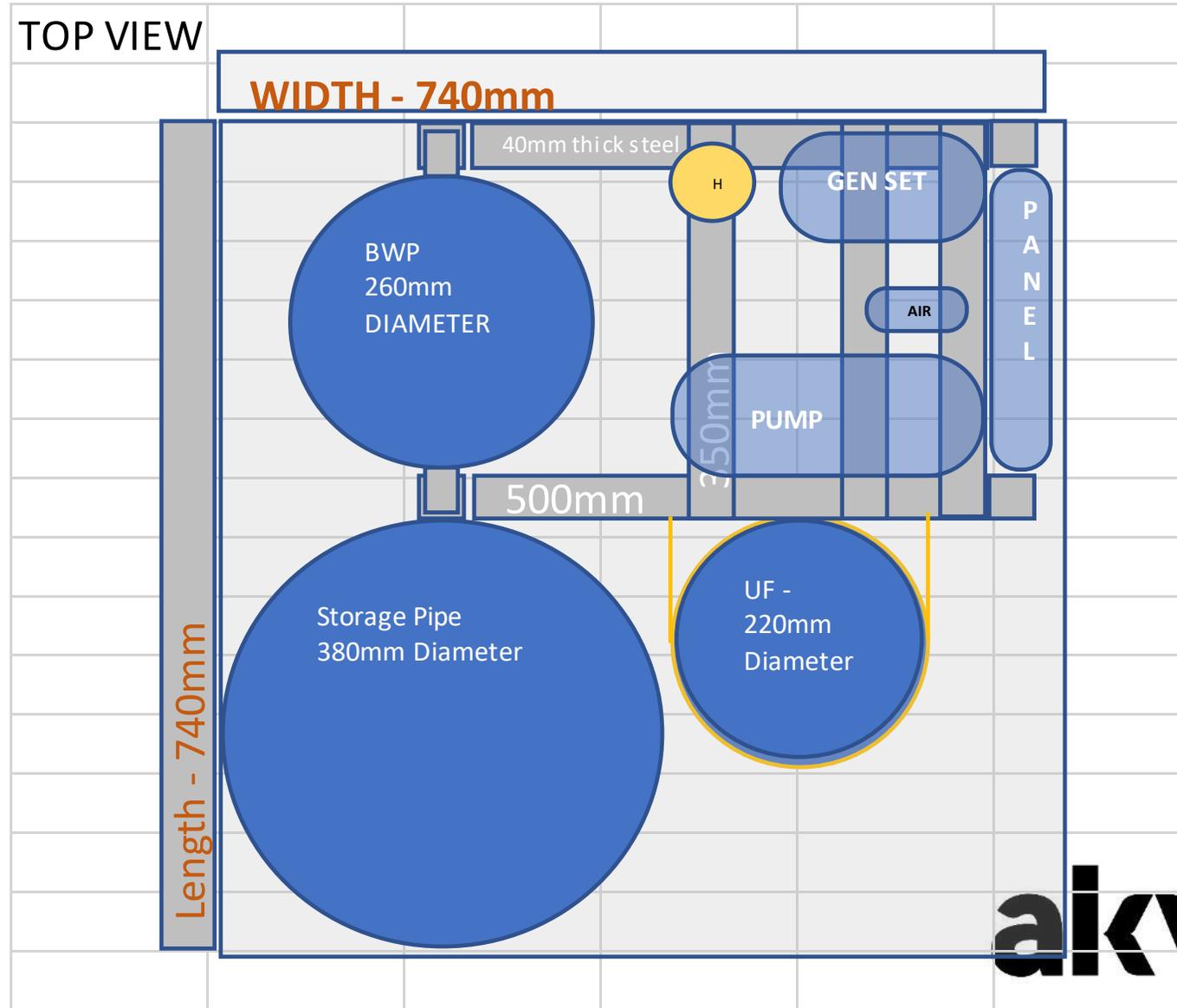
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Height fits into standard shipping container



TOP VIEW OF UF-30





Thank you for listening

Chemical free water treatment

Thanks to:

VietWater

Australian Water Association

akvotek
Water Science