NANTRA™

Chemical-Free Water Treatment

akvotek
Water Science

The NANTRA™ Technology

Nantra™ is a dual membrane process. It generates clean water that meets WHO guidelines from the water source leaving the contaminates where they are, in the river, lake or dam.

- NO Sludges to deal with.
- NO Chemical storage or handling*
- NO Jar testing
- Feed water up to 3000 NTU
- Up to 90% colour and DOC removal
- NO alkaline reduction
- 6 Log cryptosporidium, giardia and bacteria removal
- Good removal of pesticides and herbicides
- Low energy consumption

Nantra™ is a two-stage process, fully automated and fully integrated.

Akvotek NantraUF™ incorporates membranes in a unique package that offers advanced control systems and virtually eliminate the need for sophisticated operation of the plants. The process self-adjusts for changes in the feed water.

Akvotek Nantra™UF membranes are potted only at one end, allowing effective air scouring and preventing the accumulation of solids in the element. This allows the operation of membrane on very high turbidity water.

Akvotek combines these membranes with our specifically developed software that allows the process to adjust the membrane flux, recovery, backwash sequency and operation process in response to changes to feed water quality. This is a seamless process that does not require any operator involvement. It can be fully monitored off-site.

Akvotek NantraDOC™ membranes are unique to Akvotek. NantraDOC™ is neither a nanofiltration nor an ultrafiltration membrane. It has the most desirable of the properties of both when it comes to water treatment without the disadvantages normally associated with the use of these technologies. NantraDOC™ is specifically designed to remove organic compounds while minimising the removal of divalent ions that can result in reduction in alkalinity. NantraDOC™ is a low energy membrane operating at less than 1.5 Bar without high recirculation.

Nantra™ technology will SAVE:

**Land Area** -- 90% less land area than a conventional treatment

Operating costs -- 70% less than a conventional treatment plant

Capital costs -- 75% less than a conventional treatment plant

Water Quality -- ALWAYS better than 4 log removal of pathogens
ALWAYS less than 0.2 NTU

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Nantra™ Q series is based on a building block approach to the construction of the large treatment plants.

The basic building block is the Nantra Q15K, which produces 15 MLD of treated water. This, in turn, is made up of 7 Nantra Q2000 treatment skids, each capable of producing over 2 MLD. For treatment plants between 2 and 15 MLD, the appropriate number of Nantra™ Q 2000 skids are the answer.
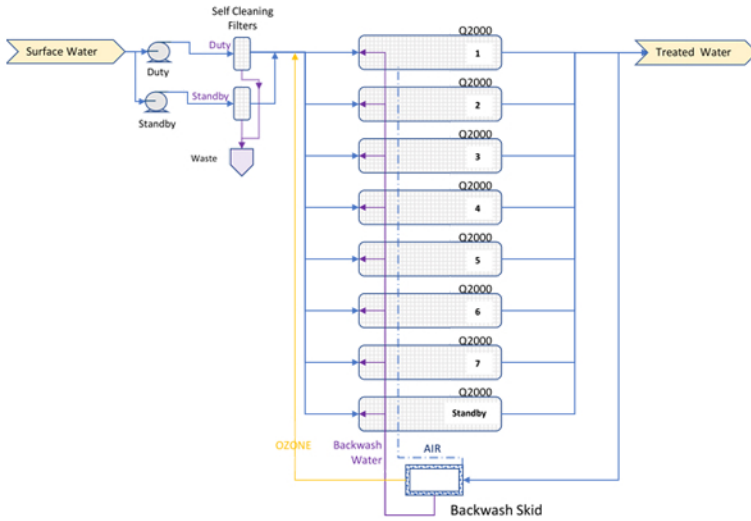

The Nantra™ Q15K utilises a single backwash skid to sequentially run on each skid. Standby backwash pumps, air blowers and dosing systems are provided. An optional 8th Q2000 skid can be provided to give full N-1 redundancy.
If iron and manganese removal is required an ozone dosing and destruction system is provided as part of this process.

Nantra™ Q 2000 BACKWASH SKID
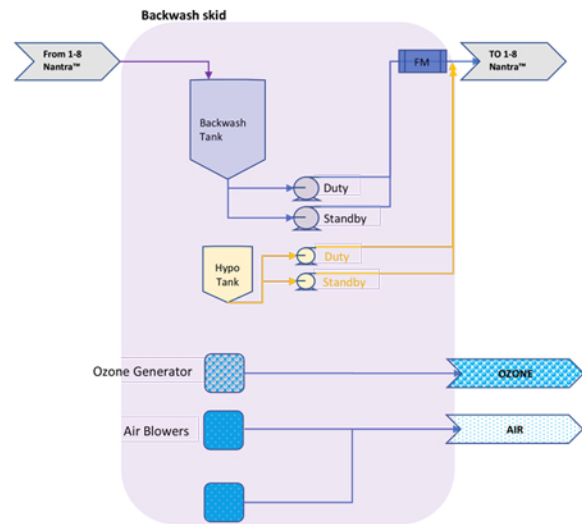
The basic building block, the Nantra™ Q 2000 incorporates all valves, instruments and controls required to operate the plant remotely or fully automatically. The energy consumption is minimised and water production kept consistent by the NantraSmart™ system that is part of the all Nantra™ Q systems.
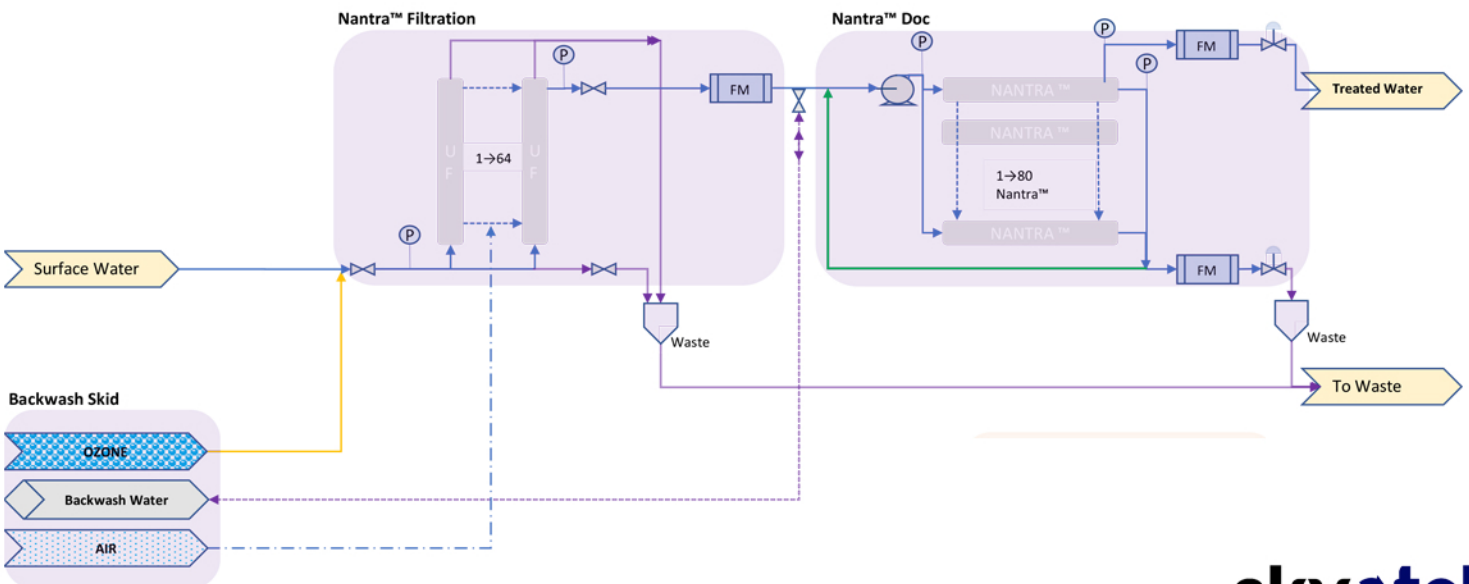
All Nantra™ S series plants are stand alone with the complete plant on a single skid. Both Nantra™UF and Nantra™Doc systems are incorporated along with the backwash equipment. Instrumentation is kept to a minimum to keep the process simple and ensure that we have an economic treatment system.

Nantra™ S
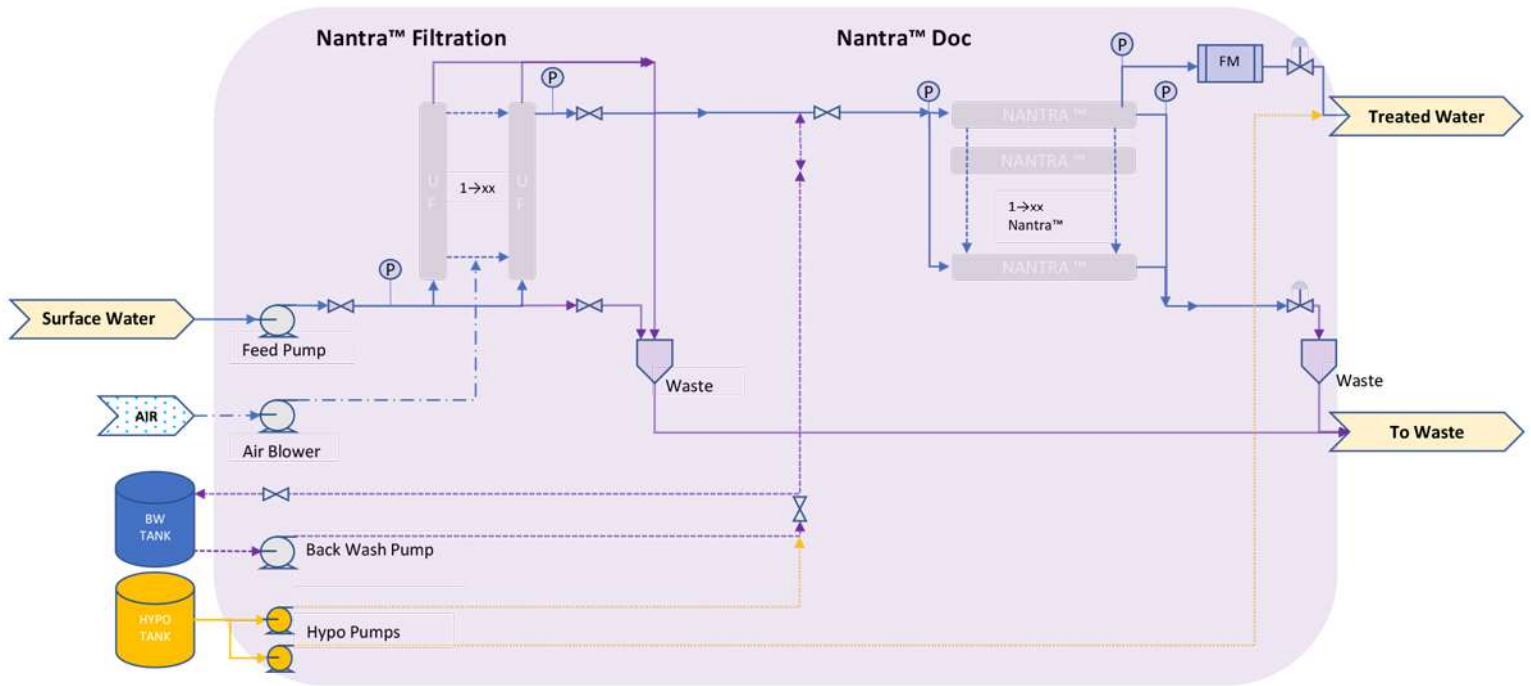
The Nantra™ S Series will reject a little more water than the Nantra™ Q series but it incorporates the same membrane and the technology.

Nantra™ S Series				
	Treated Water Flow	Membranes UF/DOC	Footprint	Note
S10	10,000 L/d	1/0	1.4m x 1.4m	Includes carbon filtration
S30E	30,000 L/d	1/0	1.4m X 1.4m	Generator fitted Emergency water supply
S100	100 m^3/d	3/4	20' container	
S200	200 m^3/d	6/8	20' container	
S500	500 m^3/d	15/20	20' container	
S1000	1000 m^3/d	30/40	40' container	
S2000	2000 m^3/d	60/80	2 x 40' containers	

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