



# Diving into Aquaculture

Aquaculture can provide a more reliable, sustainable and efficient means of seafood production as wild fisheries face challenges such as overfishing, habitat destruction, the effects of climate change, and declining fish stocks.

The need for effective treatment of water and wastewater involved in their production is universal, with filtration being vital to the process.

## **Filtration is used for numerous steps in aquaculture including:**

- Filtering intake water to remove debris and natural impurities such as high total suspended solids (TSS). Removing these and other contaminants is an important first step.
- Maintaining water quality. Filtration helps remove suspended solids, organic matter, and other impurities from the water, helping to maintain optimal water quality parameters and ensure a healthy environment for the aquaculture species.
- Treating nutrient-rich wastewater to make it suitable for reuse. Efficient filtration practices help minimize water waste and reduce the overall environmental impact of aquaculture operations.

Spiral Water's advanced automatic high solids separation and concentration technology is engineered to solve the specific challenges of filtering ultra-high and variable total suspended solids (15,000 mg/l) from water and wastewater streams including untreated "natural water." No other automatic self-cleaning filter can perform at this level.

## **How are Spiral Water filters used?**

Our filter systems:

- Provide trouble-free operation in higher TSS solids loading of 10,000 ppm+. Standard backwash filters can only handle TSS less than 500 ppm.
- Manage variable TSS automatically.
- Offer continuous filtration plus solids concentration and solids conditioning for feedstocks and reuse of nutrient-rich water and provide continuous filtrate - 99%, producing less water to waste.
- Feature smart controls that allow reliable automated filtration from 15 to 1000 micron and operate effortlessly at low system pressures as low as 10 psig with no pulsing.
- Are designed for longevity, durability and reliability and are simple to maintain, modular and scalable.

## About Spiral Water Advanced Automatic Self-cleaning Filters

Our next-generation automatic self-cleaning filters are widely used for industrial and organic wastewater treatment, pretreatment for microfiltration, ultrafiltration and reverse osmosis, water recycling and reuse across a variety of industries. Engineered with our patented high solids filtration and concentration technologies, they can be used as a pre-filter, primary filter or for reclamation from existing filter backwash of centrifuge overflow.

They are known for their ability to handle wastewater TSS removal and to process bulk solids removal up to 15,000 mg/l TSS (15% by volume), providing continuous 15 to 1500 micron filtration. (Removal of TSS typically also removes a percentage of BOD and COD.) In addition, our proprietary one-pass filtration process eliminates backwash of cross flow, thus conserving water, increasing uptime, and reducing Capex.



### The Spiral Water Difference

Spiral Water's patented automated filtration systems provide security for process systems that require finer than 75  $\mu\text{m}$  filtration that are also affected by variable TSS and high solids loading (i.e., unexpected increases in normal TSS solids caused by storms and/or system upsets). What differentiates us from other "self-cleaning backwash filters" is our ability to manage TSS above 500+ ppm. Our patented internal mechanical cleaning mechanism spins off tip vortices, creating a unique hydrodynamic agitation

that more effectively keeps the filter clean while maintaining a constant differential pressure across the filter. This keeps our filters online and working where other filters would overload and fail. Spiral Water filters automatically manage upset conditions as high as 10,000 ppm without the need of operator assistance. In multi-filter processes, Spiral Water Filter Systems are the best first line of defense. Our innovative filters and control systems provide end-users' peace of mind.



### Free Filtration Audit

Ask us about how Spiral Water's next generation filters can solve your filtration and separation challenges – and we'll provide a free filtration audit!