

# DEFENDER® REGENERATIVE MEDIA FILTERS

## THE PREMIUM CHOICE IN WATER FILTRATION



### NEPTUNE BENSON, AN EVOQUA BRAND

Neptune Benson has been synonymous with water filtration and disinfection, serving the aquatics recreational markets since 1956. With over 20,000 installations in 45 countries, we have the expertise to help you meet your water and air quality goals, while keeping safety and sustainability top of mind.

### REGENERATIVE MEDIA FILTRATION

Sand and regenerative media filters (RMF's) both operate on the principle of mechanical filtration. Sand filters trap particles in water throughout the depth of their sand bed. When the bed becomes dirty/loaded, it is cleaned by backwashing, a process that sends considerable amounts of water to drain. RMF's trap particles on the surface of flexible tubes coated with perlite media. When the perlite becomes loaded, RMF's regenerate by bumping, a process in which no water is lost. In addition to providing superior 1 vs 20-30 micron particulate removal, RMF's significantly reduce the amount of water wasted to drain.

### BENEFITS

- Superior Water Quality
- 90% Water Savings
- 75% Space Savings
- 50% Energy Savings
- 30% Chemical Savings



### REGENERATIVE MEDIA FILTERS

Simply put Regenerative Media Filters (RMF's) are nothing like your traditional sand filters. Neptune-Benson developed regenerative media technology to deliver aquatics venues with the clearest, cleanest and safest water possible!



# BETTER WATER FILTRATION

## UP TO 90% WATER SAVINGS

Nobody really likes backwashing. With Defender you don't have to! Defender filters automatically "bump" - regenerating the media for a fresh start without wasting any water to drain.

## UP TO 75% SPACE & CONSTRUCTION SAVINGS

Running out of space in your utility room? Defender filters take up to 1/4 the amount of space required by an equivalently sized sand filter. This saves both space and construction costs. Additional benefits include:

- Eliminates backwash holding tank
- Requires smaller waste line to sewer
- Addresses backwash flow rate restrictions
- Reduces operating weight

## UP TO 50% IN ENERGY, CHEMICAL AND FUEL SAVINGS

Defender filters operate at lower head pressure, therefore reducing power demand. Also, eliminating backwashing translates into significant operational savings. Consider the money that can be saved by not having to re-heat and chemically re-treat all of the backwash water sent to drain.

## REMOVES PARTICLES DOWN TO 1 MICRON

Defender filters produce crystal clear water by removing particles down to 1 micron; 20-30 times finer than sand filters typically do. The difference in water clarity produced is like night & day. There really is no comparison. In addition, the dramatic reduction in water turbidity improves transmission of UV light, which helps improve disinfection performance as well.

## COST SAVINGS ANALYSIS

In addition to superior water quality, Defender filters reduce water, energy and chemical consumption, which translates into significant savings over time. Some facilities have realized a return on investment in less than one year. Our team of professional aquatics sales associates are waiting to help quantify savings for your operation.

## SAMPLE SAVINGS ANALYSIS

Potable Water & Discharge Impact	Sand	Defender
Backwash Volume	1,483,560 gal 5,615.9 M <sup>3</sup>	88,938* gal 336.7* M <sup>3</sup>
Potable Water (Make-up) Fees**	\$5,192.00	\$311.00
Discharge Fees**	\$5,192.00	\$311.00
Energy & Fuel Impact		
Pump Power Consumption (kW)	216,569	170,170
Pump Power Cost**	\$13,307.55	\$10,455.94
Heating Requirements (Therms)	4,449	489
Heating Costs**	\$4,004.00	\$240.00
Water Treatment Chemical Impact		
Chemical Costs**	\$4,451.00	\$267.00

\* Includes 5% of the sand filter backwash volume to account for makeup water  
\*\* USD



## SYSTEM CONTROLLER

Defender operations are controlled through an industrial, state-of-the-art high resolution touch screen panel. Crisp animated graphics depict real-time status of all valves and critical system components. On-screen menus and instructions make operation intuitive and easy. Remote monitoring capabilities allow access to system data and reports when and where needed most.

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