

OP-7 Operating in Fresh Water

Spectra Watermakers can produce drinking water from a wide range of feed water sources, including rivers, lakes, wells, and oceans. Operating pressures increase with increasing salt content and lower temperatures. As operating pressures increase energy consumption also increases. Most of our machines are designed to be capable of making water in sea water as cold as 2 degrees Celsius (36F). In sea water colder than this, or if the feed water is saltier than sea water, pressure or amperage limits may be exceeded.

In fresh or brackish water, pressure and amperage will be reduced. Because the reverse osmosis membrane removes a fixed percentage of the salt in the feed water (about 99.5%) product salinity will also be lowered. When making water in most rivers and lakes the product will be near distilled water quality and can be used in batteries and other equipment requiring very pure water. Bacteria and viruses will be rejected to levels meeting public health standards. Most organic chemicals will also be removed.

Battery water can also be made by putting product water in a bucket, setting the water maker up in the service mode, returning the brine to the bucket, and collecting the product into a separate container. About 75% of the water in the bucket can be turned into high quality water before the water remaining in the bucket becomes too salty to continue.

Lake, river, estuary, and well waters may have high mineral, silt, algae or plankton content. High mineral content can result in membrane scaling, especially in our larger 700 and 1000 gallon per day units. Carbonate mineral scaling can be effectively removed using our SC-3 cleaning chemical. Silicate and sulfate scales, however, are difficult or impossible to remove. If long term operation using a non-seawater feed water source is planned we recommend that you obtain a chemical analysis of the water and send it to Spectra Watermakers technical support for our recommendations.

High levels of algae and plankton will cause more rapid plugging of the prefilters. If prefilters are to be cleaned and re-used it is important to clean them frequently as soon as one square on the prefilter condition graph lights up. As the prefilters become dirtier the pressure drop across them increases, causing the trapped particles to be forced more deeply into the filter media, where they cannot be removed without damaging the filter.

Silt and some plankton having carbonate or silica shells are abrasive. Abrasive particles will cause Clark Pump wear, as well as feed pump wear in systems using vane pumps. Avoid operating in very turbid, murky water. Avoid making water where you would avoid swimming.

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