



## Rapid Response Water Treatment

### Overview

Ecolutia Services operates the world's most efficient fleet of mobile water and wastewater treatment systems. Industrial and municipal customers trust our 24-hour, 365 days per year service for emergency, short-term or long-term use. We solve critical water issues, such as overcoming water scarcity, plant start-ups, through to providing total water provision.

This critical service is on constant standby for worldwide rapid deployment. For long-term needs Build, Own, Operate and Maintain (BOOM) projects offer you a complete 'hands off' solution. We can develop and install solutions to take care of all your site water needs.

### Applications

- Emergency water requirement
- Plant start-up and commissioning
- Planned or unplanned maintenance outages
- Seasonal or peak water consumption changes
- Temporary change in quality requirement
- Condensate recovery and polishing
- De-aerator bypass during annual inspection
- Pre-treatment to brackish or seawater RO plant
- Specialist process treatment for manufacturing
- Full flow pilot plant testing

### Typical Treatments

The modular systems can be configured in series or parallel to increase product water quality or volume. In sensitive environments zero liquid discharge systems can also be made available. The robust and versatile designs ensure a wide range of applications are on offer to meet the requirements of high pressure steam or process needs at any project worldwide. The following are some treatments examples:

**Coagulation and filtration** for colloidal, metal and solids removal is invaluable to overcome feed water variations.

**Carbon adsorption** helps to remove particulate or total organic carbon (TOC) in the feed water.

**Boiler water treatment** ensures demineralised water supply is of the optimal quality required, by using ion exchange and reverse osmosis (RO).

**Enhancement to fixed plant** to reduce waste, improve performance and use RO to reduce TOC/silica levels.

**Condensate polishing** reduces costs, recovers, recycles and prepares for reuse the contaminated condensate which contains valuable residual water and heat.

**Oxygen reduction** to 2ppb levels, which is useful for deaerator bypass water, steam blows and cold plant restarts.

## Processes

### Micro-filtration

**Atlas Series** – This micro-filtration system offers an absolute barrier and security against suspended solids breakthrough. The system is able to treat 150 m<sup>3</sup>/h (~660 GPM).

### Multi-media

**Proteus Softening** – Up to 300 m<sup>3</sup>/h (1320 GPM) of softened water is produced with a hardness level of <1ppm. A separate brine skid for on-site regeneration reduces additional expensive transport and preparation charges. Hardness monitoring and automated control ensure efficient and reliable operation.



**Proteus Filtration** – While producing an industry leading 150 m<sup>3</sup>/h (660 GPM) of filtered water from a single system our proprietary filter media also reduces NTU, TSS and SDI levels. Granular Activated Carbon is used for chlorine adsorption and organics removal. Greensand reduces iron and manganese. The system includes in-line coagulation dosing and turbidity monitoring systems with automated shut-down features to ensure quality and reliable operation.

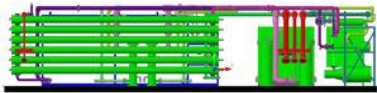
**Proteus Demineralisation** – By using ion exchange resin up to 300 m<sup>3</sup>/h (1320 GPM) of demin water is produced. The system comes with a separate 'regen-in-place' skid for a quick on-site regeneration, which reduces your additional transportation and preparation costs.

**Proteus Condensate Polishing** – This service can regain up to 250 m<sup>3</sup>/h (1100 GPM) of condensate, saving you discharge and makeup water costs. Removal of particulate ingress and ionic contamination protects your boilers and by working at 50 °C (122 °F) you retain greater heat energy which can be utilised within a plant process.

**Proteus De-oxygenation** – With <5 ppb dissolved oxygen and a flow of 200 m<sup>3</sup>/h (880 GPM), this service is invaluable for any industry using high pressure boilers. The ability to treat most feed waters and produce greater volumes is often a critical factor for your operations.

### Reverse Osmosis

**Triton SWRO144** – This system is designed to treat seawaters across the globe and produce up to 1440 m<sup>3</sup>/d (~380,000 GPD) of fresh water for a number applications.



**Triton BWRO96** – This system is designed to treat brackish water globally and able to produce up to 1560 m<sup>3</sup>/d (~410,000 GPD) of water for use in any industrial process.



## Treated Waters

Seawater, Potable, Well, River, Lake, Reservoir, Contaminated, Par-ally treated, Food process, Industrial process, Industrial wastewater, Municipal, Municipal wastewater

### Electrodeionisation

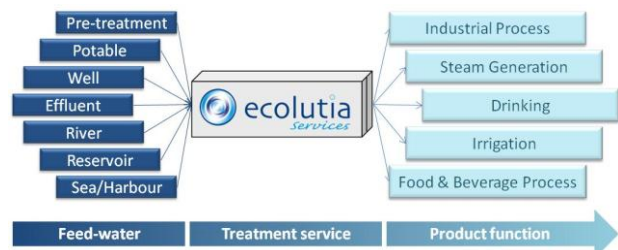
**Voltumnus Series** – The range of EDI systems integrated with softening and gas removal technologies to provide purification up to ultra-pure levels. The system can produce up to 1200 m<sup>3</sup>/d (~315,000 GPD).

## Services

**Emergency service** – For urgent or immediate requirement which is unplanned or unexpected. Our 24-hour on call service ensures we can provide a rapid response.

**Short-term/temporary service** – For a temporary need during a pre-planned maintenance, expansion pilot scheme, plant commissioning or restart.

**Long-term service** - A bespoke system designed, installed and operated for projects from 1 to 15 years. Typically for new projects or as replacement or supplement to the existing plant. Customers who benefit from a mobile treatment service include those in the power, oil and gas, chemical, municipal, electronics, food and beverage and pulp and paper industries.



## Operation & Maintenance

Our systems are operated and maintained by our team of university graduate Field Service Engineers (FSEs). The team are fully trained and skilled in water treatment, plant operation and troubleshooting.

Furthermore, for each project a 'Project Execution Plan' (PEP) is prepared to ensure clear definition of project goals, operational continuity and standardised operating procedures. This is available to the technical and field based teams involved in your project.

For a secure treated water supply contact Ecolutia Services