

Case Study

Ultrafiltration Plant for Biological Removal prior to Reverse Osmosis

Background

An existing site with an operational reverse osmosis plant and media filtration for pre-treatment was suffering from biological fouling. The plant required regular cleaning and disinfection due to the fouling on the reverse osmosis membranes and media filtration. A biological analysis found *pseudomonas aeruginosa* at levels > 20,000 in the well water.

Solution

After analysis of the water quality Browns Aqua Systems offered a UF Plant. The plant was manufactured by Browns Aqua Systems to integrate into the existing plant infrastructure and control system. The system was designed using two Hydranautic HYDRA cap-Max 60 Membranes for a flow rate of 9m³ p/hr. The plant design incorporated onboard safeties for high temperature shutdown, low flow shutdown, transmembrane shutdown, and pre-filter to remove oversized solids to the UF membranes. The plant was fully commissioned prior to dispatch and installed onsite.

Outcome

The ultrafiltration plant, once installed, removed 100% of the biological fouling. Chemical usage of the plant was increased in the first few days of operation to assist in removal of the biological fouling on the ultrafiltration membranes in conjunction with extended soak (30min every 6 hours). This was easily achieved with the settings onboard via the controller. The plant continues to provide a barrier against the biological fouling with three-monthly site services and minimal operator contact other than replacement of the bag filter.



Plant being packaged for dispatch.



Plant installed onsite.