



CleanTeQ Pty Ltd: Woodman Point waste water treatment plant effluent recycling using continuous counter-current ion exchange

Project No: 012 04G

Description:

CleanTeQ Pty Ltd received \$225,000 towards the total estimated project cost of \$450,000 to establish a pilot plant to test and validate a new ion-exchange (Clean-iX®) technology platform for large-scale recycling of wastewater treatment plant effluent, and compare the economics relative to reverse osmosis.

Clean-iX® represents a new generation of ion exchange technology – one that captures the benefits of continuous, counter-current processing. Advances in resin strength, individual process unit design and overflow flow sheet configuration have resulted in much improved robustness, versatility and overall economic performance.

This project is done in partnership with Hismelt and the Water Corporation. The partners agreed to jointly fund and support a pilot plant at Water Corporation's Woodman Point Wastewater Treatment Plant facility, capable of processing 2m³/hour of feed water to an output specification suitable for use as industrial water.

Progress/Status of research:

The Clean-iX project has greatly assisted the development of a new ion exchange platform that will yield great benefits for water recycling, particularly in relation to industry reuse and aquifer recharge. It also has great potential for remediation of water supplies such as nitrate removal. Its key benefits are in lower capital cost, lower operational costs, higher recovery rates and much lower energy consumption when compared to reverse osmosis.

The final trial was completed in September 2007. It has successfully demonstrated the 2000 l/hour throughput and product water quality has been excellent throughout the trial period. The trial has indicated that Clean-iX® will be a very competitive technology for water reuse and lessons from this work and from earlier trials can now be carried over into the design of a larger scale demonstration plant.

The final project report is due at the end of 2007.

[CleanTeQ Pty Ltd](#) won the WA Water Award 2007 for recycling in the Small Organisation, Community or Individual Project category. The [Water Awards](#) encourage sustainable water use in Western Australia and are provided by the Department of Water and the Water Corporation.