

XBAT Pilot Study

Colorado municipal water providers continue to try to close the water gap by optimizing renewable water supplies. To optimize these supplies, municipal water providers are trying to maximize reusability. To be able to maximize the reusability of the water, municipalities need to be able to control the total dissolved solids in the water, and in the future will need to be able to meet direct potable reuse standards. Traditionally this challenge has led water providers to evaluate reverse osmosis systems. These systems are very expensive to operate and typically only recover about 85% of the water, with the other 15% of water typically being lost to deep well injection for disposal.

A new ion exchange approach is being tested (XBAT) that hopes to result in lower operation and maintenance costs with up to a 99.2% recovery rate. This technology will also help meet direct potable reuse requirements. We are proposing to pilot an XBAT system and a reverse osmosis system at the Aurora Water’s Sand Creek Water Reclamation Facility to be able to compare the system costs and benefits.

The project will quantify and compare the resultant water quality; operations and maintenance costs; brine quantity; and brine classification for disposal. The pilot will run for a minimum of 6 months to collect data that will be used to develop a pilot study report summarizing these findings. We believe this technology could continue to advance water reusability in Colorado without the use of high-pressure membranes. We also believe the potential reduction in operating and maintenance costs with increased water recovery rates could lead to providers using this technology instead of seeking out new water supplies for the purpose of blending supply to meet water quality standards.

Project Partners:	Pending Partners:	Consultant:
Aurora Water	Denver Water	Carollo
South Metro WISE Authority	Metro Wastewater	

Funding Breakdown:

Partners Cash Contribution:	\$600,000	(41.4%)
Partners In-Kind Services:	\$50,000	(3.4%)
<u>Water Plan Grant (Innovation) Request:</u>	<u>\$800,000</u>	<u>(55.2%)</u>
Total Project Cost:	\$1,450,000	