

# Samsung Austin Semiconductor - Copper Ion Exchange

2022 TEEA Winner - Technical/Technology



Samsung Austin Semiconductor typically generates 8,700 gallons per hour of wastewater with copper from its chip manufacturing processes. Until 2020, an on-site chemical precipitation system was used to generate a non-hazardous metal-laden sludge, which was sent to area landfills for disposal. Although this system was in compliance with all wastewater regulations, Samsung wanted to invest in newer, more innovative and environmentally friendly technology to remove the copper from the processed wastewater.

Implementing the Copper Ion Exchange system in 2020 reduced their overall environmental impact by eliminating 1.5 million pounds of copper sludge, as well as eliminating the use of 2.8 million pounds of water treatment chemicals. It has also eliminated the need for transportation of 115 20-yard containers of copper sludge per year from area roadways. Copper recovered from the process generates a return of \$35,000 per year for the facility.

The Samsung Austin Semiconductor Copper Ion Exchange project represents environmental leadership while going above and beyond current legal requirements.