
COACHELLA VALLEY WATER DISTRICT (CVWD)

ARSENIC REMOVAL SYSTEM

Challenge

Design and install two 4,000 gpm centralized groundwater treatment systems to remove arsenic from CVWD's groundwater supply system

Coachella Valley Water District is the fourth largest district in the state of California, serving Palm Springs and surrounding area. This is a desert resort area with a growing population of both permanent residences and tourists. Water in this area is vitally important and the CVWD has established a growth plan with anticipated needs from arsenic impacted wells and decided to build, own, and operate centralized arsenic removal systems. These two systems in conjunction with the district's other water supplies are expected to provide the needs of this area through 2025.

Solution

The project goal was to meet arsenic regulations of a maximum contaminant level (MCL) of 10 micro grams per liter.

After investigation of the arsenic removal technologies available for potable water the CVWD chose regenerable ion exchange. Our system was selected due to the highly efficient regeneration and precipitation process, making it the most cost-effective system.

Results

Project scope of work was to provide engineering design to integrate a patented proprietary arsenic removal system into a CVWD building design, construct the system and start it up. We also offered guarantees on the operating performance of the system to allow the district to accurately budget operating costs.

The system design included pre filtration, multiple sequential bed ion exchange columns, and regenerant brine treatment consisting of arsenic precipitation and filtration. Waste production is a small amount of precipitated arsenic cake and the regenerant brine solution.