# ALAMEDA COUNTY, CALIFORNIA

## Zone 7 Groundwater Demineralization Plant

**HIGHLIGHTS**

- Conceptual engineering and design services for a demineralization project to remove 6,000 tons/year of salt from the groundwater.
- Treatment alternatives (EDR, NF, RO) were evaluated along with brine disposal options.
- Treated water to be provided back to the public as potable water.

Zone 7 serves as the overall water quality management agency for the Alameda Creed Watershed above Niles in Northern California. Zone 7 has primary responsibility for management of the Livermore-Amador Valley surface and groundwater resources. It has historically managed the main groundwater basin by maximizing surface water deliveries, recharging the basin with low TDS surface water, restricting groundwater pumping, and restricting wastewater disposal within the watershed.

The Demineralization Project is one element of Zone 7's Salt Management Plan, which is intended to reverse the salt build-up in the groundwater basin in Northern California's Livermore and Amador Valleys. Zone 7 retained Carollo to provide conceptual engineering and design services for a demineralization project that will remove up to 6,000 tons/year of salt from the groundwater. Treated water will be provided back to the public as potable water.

During the conceptual design phase, Carollo evaluated:

- Three treatment alternatives: EDR, NF, and RO.
- Brine disposal options: connection to an existing export pipeline and evaporation ponds.
- Wellhead treatment plant siting alternatives.

*Carollo evaluated the use of RO, NF, and EDR to remove salt from Zone 7's groundwater basin.*

Carollo conducted these evaluations with a significant level of stakeholder involvement. Principal stakeholders included Zone 7 management, engineering and operations staff, the City of Pleasanton, and water retailers within Zone 7's service area.

Carollo is currently preparing design documents for a 9.4-mgd RO treatment plant that is located in a highly residential area. RO equipment will be pre-purchased from a pre-qualified supplier before the end of the design phase. This will minimize the risk of potential change orders by maximizing the input of the equipment supplier in the development of general contractor work restrictions, equipment layout, conduit and wire routing, and instrumentation/control systems design.