

METROPOLITAN WATER DISTRICT OF **SALT LAKE** **AND SANDY, UTAH**

HIGHLIGHTS

Bench and pilot testing of three different treatment trains.

Basis of design of new 70-mgd treatment facility using pre- and intermediate ozonation, biologically active filtration with GAC media, followed by UV disinfection.

Biologically active carbon filtration proved an effective aid in removal of TOC, taste & odor problems, and was cost competitive.

Point of the Mountain Water Treatment Plant

Carollo led the effort to conduct a pilot study for Metropolitan Water District of Salt Lake and Sandy. The study evaluated several potential treatment trains for a new 70-mgd Point of the Mountain Water Treatment Plant.

Three potential treatment trains for the 70-mgd Point of the Mountain Water Treatment Plant were evaluated as follows:

- Treatment Train No. 1 – low pressure membrane filtration with conventional pretreatment.
- Treatment Train No. 2 – low pressure membrane filtration and granular activated carbon adsorption with presedimentation.
- Treatment Train No. 3 – ozonation, biologically active filtration (BAF) with granular activated carbon (GAC), and ultraviolet disinfection with conventional pretreatment.

The study set finished water quality goals for 3-Log removal of *Cryptosporidium* and *Giardia*, trihalomethanes (THMs) of less than 40 µg/l, and haloacetic acids (HAA-5) of less than 30 µg/l.

Evaluations for cost effectiveness determined a process train utilizing biologically activated GAC filtration would meet the targeted finished water quality goals and provide an economically competitive option. Further bench and pilot-scale evaluations revealed the GAC media was far superior at removal of total organic carbon (TOC) and effective for neutralizing taste and odor problems in the finished water.

Based on the bench testing results Carollo recommended the new Point of the Mountain Water Treatment Plant design utilize ozonation, biologically active filtration with GAC, followed by ultraviolet disinfection.



The Point of the Mountain pilot testing facility housed nine pilot skids, a laboratory, and office space. The building will be reused by the local fire department.