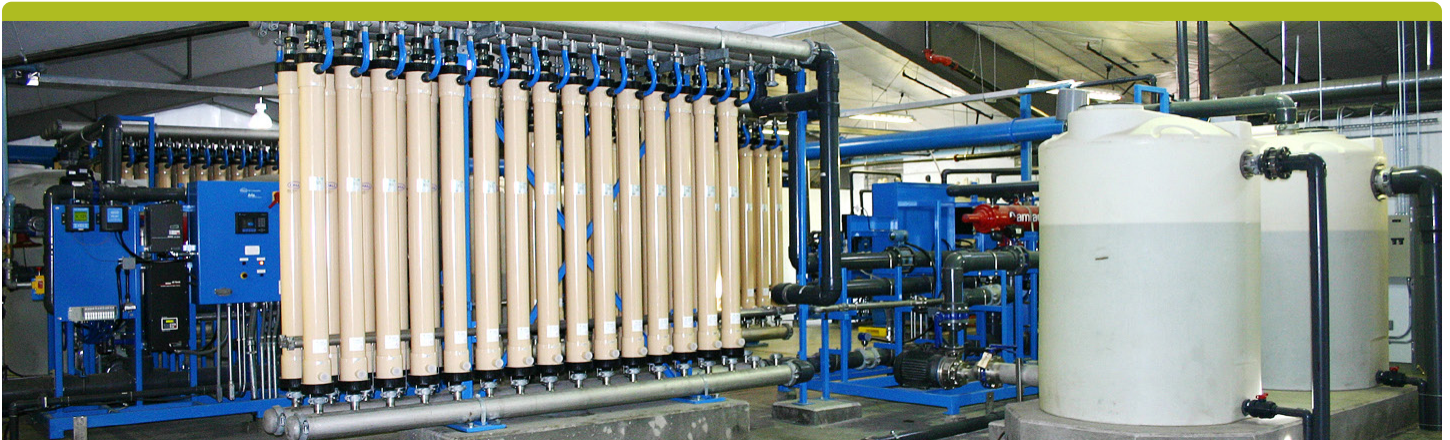


Mountain Regional Water District

Signal Hill Water Treatment Plant & Lost Creek Pipeline



MOUNTAIN REGIONAL WATER
SPECIAL SERVICE DISTRICT



Client: Mountain Regional Water Special Service District
Reference: Brian Davenport, Operations Director
Contact: P: 435-940-1916 | E: briand@mtregional.org
Location: Park City, Utah
Dates: 2002 - 2011
Capacity: 3MDG expandable to 6 MGD
Cost: \$141K (Design) | \$1.4M (Construction)
Firm: AQUA Engineering
Key Team: Scott Roger, PE, Darin Hawkes, PE, Ryan Pack, PE

- ✓ **ACEC Award Winning Project**
- ✓ One of the first Microfiltration Plants in Utah
- ✓ Design/Build
- ✓ 5.2 Miles of 24" Pipe
- ✓ Riverbank Infiltration System
- ✓ New Telemetry | SCADA

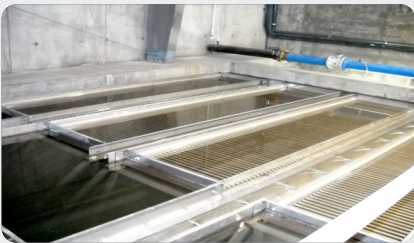


In 2002, AQUA Engineering was hired by Mountain Regional Water Special Services District (MRWSSD) to design the first phase (3 million gallon a day) of a 6 million gallon a day water treatment facility and to investigate options to access water from the Weber River. An alignment in Lost Creek Canyon was chosen for the pipeline, thus giving the project its name. Signal Hill in the Promontory Ranches Development was chosen as the site for the water treatment plant. Construction started in 2003 and the water plant received operational approval from the Utah Division of Drinking Water in February of 2005, marking the end of the \$14 million dollar project. AQUA Engineering teamed with Ames Construction of Salt Lake City on the design-build project which features the first riverbank, groundwater collection system in Utah. It includes a large, high-flow, high-pressure booster pump station with pumping capacity of over 3,000 gpm spread between six 350 horsepower pumps. The pump station was designed with expansion capabilities and has been upgraded since the initial construction to over 10,000 gpm to supply raw water to both MRWSSD and Park City's Quinn's Junction water treatment facility. A 5.2 mile, 24-inch diameter mortar lined, and coated-welded steel, ductile iron, and high-density poly-ethylene transmission pipeline connects the pump station to the water treatment facility. A 1,000-foot rise in elevation occurs along the alignment, which passes through sensitive environmental areas, two highway crossings and one river crossing. The terminal reservoir was designed as a low-hazard impoundment and holds 40 acre-feet of water. The treatment

Signal Hill Water Treatment Plant & Lost Creek Pipeline

plant is one of the first microfiltration membrane plants in the State of Utah and currently treats 4 million gallons of water per day. The riverbank infiltration system developed 1,480 acre-feet of water but has been replaced with a concrete surface diversion structure to supply river water to the plant.

In 2009 AQUA was hired to help the district expand the plant from its equipped capacity of 3 MGD to 4 MGD and to add granular activated carbon (GAC) vessels. The GAC vessels were implemented to control taste and color issues associated with tannic acids produced by decomposition of leaves and foliage entering the river during the change of seasons. The expansion was completed inside a new building addition to the primary structure. The initial design accounted for expansion of the primary clarification of the source water by implementing basins to which lamella plate clarifiers were added along with chemical dosing capabilities for primary treatment. Along with the addition of the clarifiers, sludge settling, collection, aerated storage and dewatering systems were added to the facility to manage and dispose of associated sludge.



Scope Summary

- ✓ Master planning
- ✓ Funding assistance
- ✓ Project Permitting
 - Utah DEQ (Division of Drinking Water & Division of Water Quality)
 - Army Corps of Engineers (Nationwide Permit Program)
 - Utah Stream Alterations
 - State Historic Preservation Organization (SHPO)
 - Utah Department of Transportation
- ✓ County permitting and approvals
- ✓ Construction Management & Observation
- ✓ Detailed design
- ✓ Bidding services (2009 Expansion Project)
- ✓ SCADA & Telemetry System
- ✓ Start-up services



INNOVATIVE ENGINEERING SOLUTIONS