

**Water and Environmental Programs
Engineering Success Stories**

State: Idaho

Borrower Name and Case No.: E. Shoshone Co. Water Dist.

Engineering Firm: Welch Comer & Assoc., Inc.

Rural Development Contact: Gary Hayne, State Engineer (208) 378-5619

Congressional Information: Congressional District # 1 Helen Chenoweth

County: Shoshone

Keywords: Filters, Membrane

Membrane Filters in Idaho

DESCRIPTION OF PROBLEM/ISSUE:

An old privately owned system serving four communities was declining in quality and the owner did not want to make improvements. USDA - Rural Development provided financing for purchase of the infrastructure, replacement of many leaking mains, raw water intake replacement after damaging floods, and filtration of water from creeks above the Cities of Wallace and Mullen. The District agreed to an aggressive program to install individual water meters to discourage wasteful demand. The system previously only chlorinated the creek water and thus did not meet the Surface Water Treatment Rule. They were under a consent order with the State. The District wanted a system that would meet the proposed Cryptosporidium rule. The creek water usually has low turbidity except during Spring runoff. The State Division of Environmental Quality doesn't care for rapid sand filtration for small communities due to the lack of full-time qualified operator attention. Also, regarding slow sand filters, there was concern about how much surface area would be required to have cleaned and ripened cells available when using waters that sometimes have high turbidity. In the District, SS filters would have to be located in the river valley floor to have enough level land, and the filtered water pumped to pressurize the system.

SOLUTION:

The District now has on-line the first membrane filters financed by USDA - RD in Idaho. These are expected to provide very high if not the highest quality potable water available in the State, water without high dissolved solids and with virtually all the microscopic cysts and bacteria, most of the viruses, and larger organic molecules consistently removed with minimal operator attention and reduced THM's. Memtec by Memcor, (microfiltration) and Koch (ultrafiltration) were prequalified to bid. Koch was the successful bidder. The low bidder was required to run a pilot test for a set lump sum. After a successful pilot, a second step contract for equipment and installation oversight was awarded. The construction cost of the plants (piloting, equipment,

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plumbing, electrical, and buildings on small sites in steep terrain above the towns) was \$2,970,000 for the 2 MGD and the 0.8 MGD plants. Plant startup began in January 1998 and information to date indicates they are performing satisfactorily.
