St. Cloud Treatment Facility Features Magnetic Ion Exchange Technology

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Welcome to Contractors' Forum, a new periodic feature from the FSAWWA Contractors Council that offers news and comment on issues in the water treatment community from the contractor's perspective.

In 2006, the city of St. Cloud undertook the design and construction of a 9-million-gallon-per-day water treatment plant to address ongoing water quality and disinfection byproduct violations. A relatively new magnetic ion exchange (MIEX®) treatment process was selected that uses a resin designed specifically to remove dissolved organic carbon (DOC) from raw water as a pretreatment step. DOC removal is necessary to control the formation of total trihalomethanes (TTHMs) that occurs when DOC contacts chlorine in the distribution system.

The process was developed in Australia and provides the ancillary benefit of hydrogen sulfide removal. While it has been deployed at multiple locations throughout the United States, the St. Cloud facility represents the largest of its kind in the nation and boasts a number of firsts in deployment of the technology.

Pilot testing in 2004 demonstrated that it could reduce TTHMs and haloacetic acid concentrations in the finished water well below EPA standards, reduce raw water hydrogen sulfide levels by over 70 percent, and reduce both taste and odor in the finished water. The total detention time for DOC removal is 10 to 30 minutes.

Construction on the new facility was completed in March 2008 by one of three selected, pre-qualified contractors to bid the project. Named after a long-time local rancher whose estate donated the property for the facility, the H. Clay "Junk" Whaley Sr. Memorial Water Plant includes a 5,200-square-foot administration building and high-service pump room, two 1.0-million-gallon prestressed concrete storage tanks, chemical storage and feed facilities, polishing filters, the MIEX treatment structures, three well sites with standby generators, site security, piping, electrical, instrumentation and controls, sitework, and landscaping.

Water is pumped from Upper Floridan Aquifer wells and gravity fed through several large resin contactor and settler concrete structures. These two steps are integral to the treatment process, with the costly resin being captured and regenerated in a separate, dedicated off-line system. The regeneration tanks collect the resin and following regeneration, the resin is pumped back to the contact basin. Clean water flows from the MIEX structure through channels and pipes to polishing filters, where any residual resin particles are removed before chlorination, fluoridation, and storage in on-site ground storage tanks. From storage, the water is distributed by high-service pumps to the St. Cloud potable water system.

Contractors Council to Host Pre-Qualifying Workshop at FWRC

On April 6 at the 2009 Florida Water Resources Conference in West Palm Beach, the Florida Section AWWA Contractors Council will sponsor a workshop from 2 p.m.-4 p.m. to discuss the advantages of pre-qualifying contractors for bid projects. Titled "Contractor Pre-qualification: Why Do It? When to Do It? How to Do It?" the session will feature panelists offering owners', engineers', and operators' perspectives and answering questions from the audience.

The Contractors Council will also sponsor an Early Bird Reception immediately following the workshop from 4 p.m-5 p.m. Please come join us!

Gathering for the kick-off meeting of the FSAWWA Contractors Council are, from left, Mandi Rice of Tampa Bay Water, FSAWWA Region III Chair Craig Doeden of American Cast Iron Pipe Co., council treasurer Patrick Hewitt of Wharton Smith Inc., FSAWWA Chair Ana Maria Gonzalez of Hazen and Sawyer, FSAWWA Past Chair Matt Alvarez, council chair Jason Seubert of Garney Companies Inc., and Mark Kelly of Encore Construction Company. Not pictured: council vice chair Katus Watson of CH2M Hill Constructors and members David Beach of Beach Construction, Bill Mcdevitt of Cardinal Contractors Inc., Shajan Joykutty of Hazen and Sawyer, Peter Kinsley of the Haskell Company, Richard Hewitt of PCL Construction, and Richard Lewis of MWH.