Compiled by *WWD* Managing Editor Caitlin Cunningham

Craig Hannah, P.E.

finding lost water

The keys to preventing real and apparent water loss

Water loss in distribution systems—both real and apparent—carries a hefty price tag, and utilities across the country are experiencing or preparing for water shortages. WWD *Managing Editor Caitlin Cunningham discussed this situation and potential solutions with Craig Hannah of Johnson Controls.*

Caitlin Cunningham: How prevalent are leaks in U.S. water distribution systems?

Craig Hannah: Water loss is coming to the forefront as a challenge that affects U.S. utilities. Non-revenue water loss as a percentage of the volume supplied in distribution systems nationally usually ranges from 10% to 20%, but it is not uncommon for utilities to experience an even higher percentage of water loss. Research shows that approximately 80% of all real water losses can be attributed to leaks at service connections.

A government survey also shows at least 36 states anticipate local, regional or statewide water shortages by 2013. There are still many water utilities in the U.S. using wooden water mains that were installed during the 19th century, and it is also common for municipal systems to still use iron pipes that were installed more than 60 years ago.

Cunningham: What is the significance of this physical water loss to affected utilities? To the overall water industry?

Hannah: The U.S. Geological Survey estimates that water lost through distribution systems is 1.7 trillion gal per year, at a national cost of $2.6 billion per year, according to the U.S. EPA. In addition to the financial ramifications of inefficient water distribution systems, water scarcity makes effective water loss management a priority for many cities.

Cunningham: How do apparent water losses—those caused by inaccurate accounting of water use—factor in?

Hannah: Apparent losses are caused by many things, such as inaccurate water meters, improperly sized and typed water meters, human error in the meter reading and billing process, billing system errors and theft of service. Each utility should develop an appropriate water meter testing, repair and replacement policy. Large water meter services should be periodically reviewed to ensure the correct size and type of meter is installed for the application.

Some municipalities are still employing archaic recording systems through journaling each residence's water usage in written documents, which lends itself to errors during the meter reading and billing process. Hand-held and touch-read devices are a drain on manpower, using cost-intensive labor and other resources. AMR and AMI systems greatly reduce apparent losses by removing human error. Additionally, AMI systems provide hourly usage data, which enables better consumer education of individual water use and reduces the ability for end-users to negotiate a disputed invoice.

Cunningham: What other leak prevention and apparent loss minimization solutions are available today? What benefits might end-users expect?

Hannah: Real water loss can be reduced through automated leak detection systems, pressure management programs and SCADA system optimization. Apparent water loss can be reduced through improving the accuracy of water meters, AMR/AMI systems, meter sizing and typing and reviewing the billing system. In addition, performance contracting provides an innovative method for financing these improvements. Periodic meter testing to ensure accuracy is another way of maintaining the water distribution system.

Consumers can realize several benefits from water loss optimization programs. Through AMR/AMI systems, municipalities and utilities can be better stewards of taxpayer dollars, reduce apparent losses and provide enhanced customer service.

Reducing water loss helps keep the cost of water down and saves energy, which ultimately improves the environment and promotes fiscal responsibility. Hourly usage data from an AMI system can help consumers find ways to conserve water and save money. Comprehensive leak detection systems also benefit consumers by helping utilities identify and repair leaks in an efficient manner, causing less disruption to daily activity. WWD

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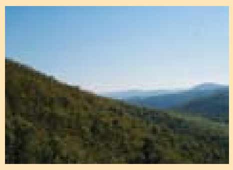
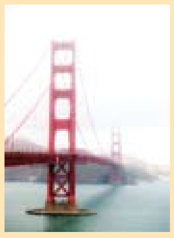
EPA Issues Final Guidance to Protect Water Quality in Appalachian Communities



The U.S. Environmental Protection Agency (EPA) released final guidance on Appalachian surface coal mining, designed to ensure more consistent, effective and timely review of surface coal mining permits under the Clean Water Act and other statutes.

The guidance is based on the best-available science and incorporates input and feedback from more than 60,000 public and stakeholder comments. It enables the agency to work with states, the U.S. Army Corps of Engineers, mining companies and the public to protect communities from harmful pollution associated with coal mining.

San Francisco PUC Dedicates California's Largest UV Water Treatment Facility



San Francisco Public Utilities Commission General Manager Ed Harrington, along with other state and federal officials, dedicated the new Tesla Treatment Facility in Tracy, Calif., in July. With a capacity of 315 million gal per day, the new facility is the largest in the state and the third largest in North America.

Targeting LEED Silver certification, the facility uses UV equipment to enhance the disinfection of drinking water for the 2.5 million Bay area customers.

World Demand for Water Desalination to Reach $13.4 Billion in 2015

According to a new study from The Freedonia Group Inc., world demand for water desalination products and services is projected to increase 9.3% annually and reach $13.4 billion in 2015.

In the U.S., population growth and economic development in areas with insufficient water supplies will boost demand for membrane elements and other products used in membrane systems.

Jersey City, N.J., to Upgrade, Repair Sewer System

A settlement between the U.S. and the Jersey City, N.J., Municipal Utilities Authority (JCMUA) will resolve Clean Water Act violations by JCMUA for failing to properly operate and maintain its combined sewer system, the Department of Justice and EPA announced.

JCMUA violations included releases of untreated sewage into the Hackensack River, Hudson River, Newark Bay and Penhorn Creek. JCMUA will invest more than $52 million in repairs and upgrades to its existing infrastructure and pay a civil penalty of $375,000.

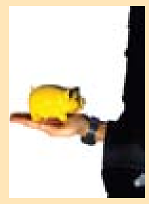
Aquatech Amsterdam Set for Nov. 1 to 4

Water professionals from all over the world are preparing to gather for Aquatech Amsterdam 2011, a trade exhibition for the global water industry. The annual event, established in 1964, takes place Nov. 1 to 4 in the Netherlands and features a myriad of presentations, workshops, and networking and entertainment opportunities for attendees, including a two-day workshop on Europe's new Water Framework Directive, which takes effect in 2015.

Attendees also can look forward to technology presentations featuring solutions from more than 40 different countries, the International Aquatech Innovation Award ceremony, a pipe-fitting championship and more.

Coinciding with the tradeshow is International Water Week Amsterdam. Guests are invited to attend Aquaterra, a conference on water management in low-lying, densely populated deltas; the International Water Week Conference; and excursions to water treatment installations.

Chemical Companies Pursuing Municipal Markets



More than 150 companies are actively bidding 70 different chemical compounds to municipal water and wastewater utilities in the U.S. and Canada. The purchasers include 60,000 utilities in the U.S. and 6,000 in Canada, according to McIlvaine Co. statistics. Most of the bids are for one year, with January to December as the most popular contract period.

Networking News

ISCO Industries Director Andy Wright was elected to serve on the Water and Sewer Distributors of America board of directors.

Wachs Water Services and Pipeline Inspection & Condition Analysis Corp. partnered to develop and deploy specialized metallic pipeline inspection technology solutions.

RJN Group named John Peters a new principal. WWD

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