Testimony of
Benjamin H. Grumbles, Director
Arizona Department of Environmental Quality
Before the
Committee on Environment and Public Works
United States Senate
Washington, D.C.

July 28, 2010

Good afternoon Madam Chairman and distinguished members of the Committee. I'm Benjamin H. Grumbles, Director of the Arizona Department of Environmental Quality and former U.S. EPA Assistant Administrator for Water from 2004 to 2008.

Thank you for the opportunity to testify on efforts to promote increased security in the Water Sector, especially focusing on chemical security at drinking water and wastewater facilities, as well as potential impacts of these efforts. Governor Jan Brewer and the citizens of Arizona also appreciate the opportunity to suggest to Congress ways to continue a successful national collaboration that also focuses on local and regional differences and avoids costly or risky Federal mandates.

As a national water official during most of the post-9/11 era, I became aware of the many steps EPA, state agencies, local governments and industry associations were taking, and continue to take to develop tools, training and technical assistance to help water and wastewater utilities identify and mitigate risks associated with chemical security. With the enactment of the Public Health Protection and Bioterrorism Preparedness and Response Act of 2002 and Presidential mandates under Homeland Security Presidential Directives, EPA has worked to improve water security and preparedness and the water community has taken these new roles seriously. As a result, over the past decade, the nation has made great progress in improving the security and resiliency of the nation's water infrastructure, but we can't claim victory yet. We are safer but still not safe enough.

Existing statutory requirements address chemical security at drinking water systems to some degree. Section 1433 of the Safe Drinking Water Act required each community water system to conduct a vulnerability assessment, certify its completion, and submit a copy to EPA. These comprehensive vulnerability assessments addressed security at water systems from collection, to treatment, to distribution including the use, storage and handling of chemicals. Section 1433 also required the preparation or revision of emergency response plans that incorporate the findings of the assessments.

Since 2002, state agencies have received funding from EPA to support enhanced security related efforts. In Arizona, our Drinking Water program has used this funding to expand upon its existing security measures by incorporating new security, emergency preparedness and response initiatives into the core program. Examples of new and enhanced security initiatives include: establishing a security specialist position within the State's drinking water program, providing security-related training and technical assistance to public water systems, facilitating communications between the facilities and the emergency response agencies and conducting emergency response training exercises for facility operators.

Legislation passed last year in the House and under consideration in the Senate would expand the scope of current security legislation to both water and wastewater utilities. A key provision in the House bill is a requirement for utilities to assess treatment methods to consider "inherently safer technologies" or ISTs. While there isn't a single definition, the main focus of IST is minimizing quantities of hazardous materials by substituting safer materials and processes when and where possible. On its face, few would argue with the goal of IST. Perhaps the question is how should it be implemented and by whom?

The primary purpose of drinking water systems is the delivery of safe drinking water. The primary purpose of wastewater treatment systems is the safe and efficient collection, treatment, disposal and increasingly beneficial reuse of municipal, domestic, commercial and industrial wastewater. Efforts to craft Water Sector security legislation must

recognize the essential public health objectives of these facilities, and the impact any new requirements to consider and implement alternate treatment processes may have on accomplishing these important objectives. In other words, any chemical security regulations aimed at the Water Sector needs to balance the primary goal of protecting public health with enhancing security and public safety. We can't afford to sacrifice public health in the name of chemical safety.

To that end, reconciling new security rules with the public health requirements of the SDWA and is an ambitious, but necessary role for the government. However, decisions on the chemical use at individual facilities are best made by the utility experts at the local level. As a result, any future regulations must maintain flexibility for utilities to make these decisions based on a well-reasoned assessment of various factors including: meeting public health and environmental requirements, maintaining reliability of treatment, accounting for local water chemistry and environmental characteristics, ensuring plant worker safety and, of course, addressing security concerns.

Even without legislation, utilities across the nation are evaluating the use of disinfectants in light of security concerns and new water quality requirements like the Stage 1/Stage 2 Disinfectants/Disinfection Byproducts Rules, the Ground Water Rule and the Enhanced Surface Water Treatment Rule under the Safe Drinking Water Act and surface water discharge requirements under the Clean Water Act permitting program. While some utilities have completed a risk assessment and decided to change disinfection methods, for others, chlorine gas remains the only viable form of disinfection to provide sufficient public health protection. Treatment methods will continue to improve but we risk making dangerous trade-offs in we force chlorine substitutes upon community water and wastewater systems without a careful evaluation of local and regional factors.

I'd like to highlight the City of Phoenix Water Services Department's disinfection alternatives evaluation in an effort to underscore the unique, site-specific considerations that underlie achieving the goal of safe drinking water and meeting the disinfection needs of a public water system.

The Phoenix Water Services Department serves drinking water to a population of 1.6 million customers using both surface water, from the Colorado, Verde and Salt Rivers, and groundwater in its production of drinking water. Prior to an alternative disinfection study in 2003, Phoenix used gaseous chlorine at all five surface water treatment plants. The two largest facilities stored chlorine, on-site, in 17-ton railcars. The City also has 78 remote disinfection facilities including well sites, booster pump stations and reservoirs. Prior to the study, the disinfection methods at these remote sites was varied and included on-site generation and storage of sodium hypochlorite, chlorine gas, calcium hypochlorite tablet feeders and bulk sodium hypochlorite storage and feed systems.

The 2003 study identified a number of operational issues with the alternative disinfection methods at the remote facilities. With on-site generation of bulk hypochlorite, for example, if the chemical is not produced and managed properly, the potential exists for introduction of contaminants, namely bromate, perchlorate, and chlorate. In addition, hypochlorite products degrade quickly in the desert heat making disinfectant residuals hard to control and consistently meet the SDWA requirements. As part of the 2003 study, Phoenix also found many of these alternative methods were operator and maintenance intensive.

Through this study, the City of Phoenix was able to evaluate the social, environmental, and financial costs of the various disinfection alternatives to make a balanced, well-informed decision. As a result of the study, the City continues to use chlorine gas at its surface water plants, but has replaced the railcars with 1-ton containers and will be installing double containment at all facilities, minimizing the risk of chemical exposure to the public. The City will also be converting to chlorine gas with double containment at several remote disinfection facilities.

While I'm talking about my home state, in the arid southwest, I cannot stress enough that every drop of water is worth using and reusing. I imagine this is true in other western states where water is so precious. In Arizona, I am co-chairing a large stakeholder

effort, convened by Governor Brewer, to enhance the sustainability of water by increasing reuse, recycling and conservation of water and to support continued economic development while protecting Arizona's water supplies and natural environment. While recognizing the need to safeguard the public, I would encourage those considering future water security legislation to be mindful of possible unintended consequences especially on efforts to conserve, reclaim or reuse water.

In closing, I'd like to reiterate that as a nation we've made great progress in securing our water infrastructure but there is still more to be done.

Congress should provide direction, but not broadly dictate technology or methods. Those decisions should be made by the local utilities which have the necessary expertise and the knowledge of their systems. They are in the best position to make fact-based, risk-based decisions on, what I like to call, "inherently smarter technologies" that will protect both public health and safety.

Security-related decisions need to be made in close consultation with state agencies responsible for regulating both water and wastewater facilities. I am not advocating that states take on all the roles and responsibilities associated with water security but, rather that they have an appropriate role, commensurate with their current responsibilities, for overseeing the implementation of these programs. In addition, states, such as Arizona, have well-developed, ongoing relationships with both the water and wastewater utilities as well as EPA. We are using existing processes, like state "sanitary surveys", done every three years for each facility, to imbed, or institutionalize security considerations into source-to-tap risk assessments and other analyses. That should be allowed to continue.

Lastly, adequate resources should be dedicated and available to the states to assist utilities and operators in making these important decisions that affect both public health and safety. Federal funds are critical to strengthening the science, technology, and expertise in the war against terrorism on the waterfront, as well as the homeland.

Thank you again for the opportunity to testify and I would be glad to answer to any questions that members might have.