

# Consumer Confidence Wanes as US Drinking Water Quality Takes a Hit in the Headlines

By Kelly A. Reynolds, MSPH, Ph.D.

As 2009 came to a close, copious media headlines were touting water quality concerns at the tap. While regulatory agencies scrambled to develop new policies of enforcement, and politicians approved billions of dollars for infrastructure improvements, the POU industry once again provided solutions to the ongoing problem of tap water contamination.

## Harsh headlines

The barrage of media headlines began in September, with the detection of harmful toxins (lead, pesticides and other toxins) in tap water from thousands of US schools.<sup>1</sup> California Senator Barbara Boxer added to the stream of criticism aimed at the US EPA and the former Washington administration for not doing more to protect our nation's children.

Additional media reports focused on damaging water quality information compiled by *New York Times* reporters and the Environmental Working Group (EWG), a Washington DC-based non-profit watchdog organization founded in 1993. Both groups summarized US EPA data, estimating that 49 million people consumed drinking water in violation of the federal *Safe Drinking Water Act* (SDWA) from 2004 to 2009. Front-page articles in the *New York Times* reporting "more than 20 percent of the nation's water treatment systems have violated key provisions of the *Safe Drinking Water Act* over the last five years" caused a stir in Washington and among consumers alike.<sup>2</sup>

Further affecting consumer confidence, the data was personalized by the ranking of water utilities serving cities with over 250,000 people based on levels of chemical contaminants present in the finished water. To aid consumers, EWG also released an online, interactive tool designed to track drinking water contamination in public water supplies linked to local zip codes ([www.ewg.org](http://www.ewg.org)).<sup>3</sup> The result: more headlines.

## Data transparency

Although recent reports created an aura of scandal, information on contaminant monitoring for all public water utilities is readily available at US EPA's website, and directly from local utilities. In fact, SDWA mandates that all public water utilities send a report of the water quality monitoring data, known as the *Consumer Confidence Report* (CCR), to each customer every year. In 1998, EWG produced a similar summary of 1994-95 data where 10,542 systems reported health standard violations,

affecting 45,692,403 persons. This earlier report was the subject of a previous On Tap article (March 2001).<sup>4</sup>

While there is transparency to the data, actions taken (or lack thereof) following clear and repeated violations have the media and environmental watchdog groups grumbling. All known violations were reported to state and federal regulators, but fewer than six percent of the water systems implicated were punished for the standard violations.

Questions therefore arise as to whether or not the system of drinking water quality protection and enforcement is functioning properly. The *New York Times* article was critical not only of the widespread violations, but the lack of response from federal agencies to enforce current standards or aid in mitigation of the problem.

Under the current system, water utilities often self-monitor and self-report. US EPA then has the jurisdiction and responsibility to enforce the standards. Why is there not more legal enforcement of the standards in place?

## Compliance struggles

Federal standards are more stringent than ever as maximum contaminant levels allowed in drinking water have decreased over time. For example, in 2006, the MCL for arsenic was reduced from 50 ppb to 10 ppb. This more stringent standard made compliance difficult for some utilities; however, the maximum contaminant level goal for arsenic is zero ppb, given that any detectable level of exposure is considered a health risk.

According to Tom Curtis, Deputy Executive Director of the American Water Works Association, "Still there is work to be done. More than 96 percent of health-based *Safe Drinking Water Act* violations occur at small utilities with fewer than 10,000 customers. These utilities often struggle with the expense of upgrading facilities to meet new regulations."<sup>5</sup>

Pressure from recent headlines, and the Senate Environment and Public Works committee, prompted US EPA to develop a new policy for addressing violations of federal water quality standards. On December 8, US EPA issued a memo outlining a new strategy for enforcement of the requirements of the SDWA. This new policy, to be implemented in January 2010, focuses on systems with the most serious or repeated violations, and utilizes an Enforcement Targeting Tool with the goal of returning violators to a status of compliance, while increasing the enforcement response effort.<sup>6</sup>

## Legal contaminants

The *Safe Drinking Water Act*, originally passed in 1974, aimed to protect public health by regulating the maximum allowable contaminant levels of certain chemical, physical and biological hazards present in drinking water. Currently, there are more than 54,700 public water systems under US EPA's jurisdiction. Each of these systems is required to meet the water quality requirements of the *Safe Drinking Water Act*.

The true impact of waterborne contaminants is unknown. Exposure to waterborne microbes causes an estimated 19 million cases of human illness per year in the US.<sup>7</sup> In addition, exposure to priority contaminants, such as arsenic, uranium or tetrachloroethylene (a common dry cleaning solvent) can lead to health effects (such as cancer) that may take years or decades to develop.

US EPA is under pressure from consumers, environmental and health groups and politicians to address long-term concerns over unregulated contaminants in drinking water. Hundreds of chemicals have been found at the tap that are not even on US EPA's list of regulated contaminants.

According to the EWG's assessment of 20 million tap-water quality tests conducted between 2004 and 2009, "Another 202 chemicals with no mandatory safety standards were found in water supplied to approximately 132 million people in 9,454 communities across the country. These 'unregulated' chemicals include the toxic rocket fuel component perchlorate, the industrial solvent acetone, the weed killer metolachlor, the refrigerant Freon, and radon, a highly radioactive gas."

## Conclusions

The recent *New York Times* article points out several unsettling facts:

- The majority of drinking water violations occur in small community water supplies (serving < 20,000 people).
- Violations have occurred in every US state
- Documented contamination events were both short term and persisting for years in different cases
- Extreme exceedances have been reported: radium detected in US drinking water was 2,000 percent higher than the legal limit in some areas, and illegal contamination persisted for years in hundreds of systems.

Many of the contaminants of concern can be removed from water at the point of use with common treatment technologies, such as carbon filtration and reverse osmosis. EWG issued a guide to safe drinking water, emphasizing the need for consumers to read their CCR and test private well water. They also warn that bottled water may be nothing more than "packaged tap water" and recommend that consumers filter their own tap water at the point of use to remove common contaminants sometimes

missed by public treatment works. POE filtration systems provide extra protection from contaminants in shower aerosols or other household sources. Infants, children and pregnant women are at increased risk of adverse health effects from waterborne contaminants and remain a recognized group for increased diligence.

Increased protections are expected to be implemented at the drinking water source, treatment works and distribution trains. Bipartisan support for improving drinking water infrastructure in the US is evident in the *Water Infrastructure Financing Act*, providing \$15 billion to US EPA's Drinking Water State Revolving Fund program from 2010 to 2014.

While the most complete approach to drinking water treatment starts at the protected source and ends at the tap, POU treatment devices provide the necessary tools to minimize consumer exposure to both regulated and unregulated contaminants.

## References

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