Ensuring Chromium-6 Compliance in California: Addressing Concerns, Delivering Innovation

AMS CEO Rick Bacon on How SafeGuard™ H2O Offers Utilities a Reliable, Cost-Effective Solution Without Compromising Service or Market Fairness

In California, approximately 500 wells operated by around 300 municipalities are affected by elevated levels of Cr6 in their groundwater supplies, exceeding the state's regulatory limit of 10 ppb. As these water systems work toward Cr6 compliance, they are evaluating technologies based on cost, reliability, and long-term sustainability. Amid this process, AMS's SafeGuard™ H2O technology has emerged as a compelling solution that delivers proven Cr6 removal with favorable performance metrics around environmental impact, operational efficiency and cost. However, as is the case with many innovations, it has also prompted questions from stakeholders.

Nadia Abboud, President of ENAY Group, sat down with AMS CEO Rick Bacon to discuss the role of innovation in Cr6 treatment, understand how SafeGuard H2O compares to other treatment options, and address concerns around technology access and service continuity.

Q: What are the treatment options for water systems requiring Cr6 removal?

Rick Bacon: The state of California outlines three Best Available Technologies (BATs) for treating Cr6 and ensuring compliance with the MCL: ion exchange, reverse osmosis, and reduction-coagulation-filtration (RCF), which includes systems using either bulk ferrous chloride or in-situ electrolytic generation of stannous. However, because the use of bulk ferrous chloride requires an oxidation stage to remove the excess ferrous that must be used to ensure adequate treatment, the process is more appropriately defined as RCOF (reduction-coagulation-oxidation-filtration) instead of RCF. Adding this oxidant risks reconverting Cr3 back to Cr6 in the treated water. While water systems are not required to adopt a BAT to comply with the Cr6 regulation, any proposed treatment must adhere to Title 22 guidelines for state approval. Our technology, SafeGuard H2O, is an RCF solution that generates a stannous reagent on-site and on-demand, eliminating the need for bulk chemical storage or the additional oxidation step.

Q: In terms of treatment costs, how does AMS's RCF solution compare to other BATs?

Bacon: One of SafeGuard H2O's greatest strengths is cost-effectiveness. Our system offers 30 to 40% lower lifetime treatment costs than other BATs. The capital cost to treat a unit of water volume is typically most expensive with ion exchange, and most economical with an RCF system using an on-site generated stannous reagent. In addition to having the highest capital cost, the ion exchange SBA process has substantial operating costs associated with the removal and treatment of significant volumes of toxic waste. It should be noted that the costs of a ferrous reagent RCOF system does not include continuous monitoring of treated water quality to ensure the system is operating, whereas the on-site generated stannous reagent RCF system includes this real-time monitoring cost. The drastic cost differential between the technologies is maintained across small-to-large design flow capacities.

As noted in the state's technical review: "*At the proposed MCL of 10 ug/L, RCF [Reduction, Coagulation and Filtration] is calculated to be the least expensive treatment for all but 11 sources.*"

Q: Some have expressed concerns that a proprietary system like SafeGuard H2O could create a monopoly or drive up costs. How do you respond to these concerns?

Bacon: We recognize that when a utility invests in a water treatment system, it is making a long-term commitment to the costs of maintaining and operating that system. Our goal with SafeGuard H2O is to make Cr6 compliance more affordable and operationally feasible. Our technology operates using two widely available, non-proprietary consumables: a certified, non-toxic tin precursor and electricity. While AMS does not have control over the pricing of these consumables, their wide availability means less exposure to drastic price increases. In recent times, the proprietary bulk specialty chemicals that traditional Cr6 treatment systems depend on have increased by more than 50%.

Q: What if AMS were to go out of business or experience a major disruption? Would utilities be left without support?

Bacon: That's a responsible question and we have taken the proactive steps to ensure the answer is no. Similar to other water treatment technology providers, AMS has robust contingency plans in place to ensure service continuity in the event of unforeseen circumstances. Our approach includes maintaining strategic inventory reserves, establishing disaster recovery protocols, and forging strong partnerships with reliable third-party service providers to supplement the dedicated in-house AMS team of field service technicians. Additionally, AMS equips third-party providers and water systems with thorough documentation and hands-on training, enabling them to operate and maintain the equipment as necessary. When water systems work with AMS, they can be confident in continuous access to parts and service, regardless of external circumstances. This proactive strategy reflects our unwavering commitment to supporting utilities at all times and minimizing the risk of service interruptions. So even in the unlikely event of disruption, utilities will continue receiving support.

Q: What role does AMS see itself playing in California's long-term water future?

Bacon: We are here as a partner, not just a vendor. We believe that advanced water treatment technologies should be affordable, resilient, and grounded in science. SafeGuard H2O is an example of that vision. It offers a solution that is transformative, cost-effective, and reliable. It addresses California's Cr6 water treatment challenges and helps communities access safe drinking water today and for decades to come.

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