Arsenic Water Technology Partnership

Goal and Objectives: The overall goal of this program is to enable water utilities, particularly those serving small rural communities and Indian tribes, to implement the most cost effective solutions to their arsenic treatment needs. This goal will be met by accomplishing three objectives: 1) to conduct research and develop innovative arsenic removal technologies with a focus on reducing energy costs, minimizing operating costs, and minimizing quantities of waste; 2) to demonstrate applicability of these technologies to a range of water chemistries, geographic locales, and system sizes; and 3) to evaluate the cost effectiveness of these technologies and provide education, training, and technology transfer assistance to the user communities.

Background: The revised arsenic standard of 10 ppb will significantly impact an estimated 4000 water systems, the majority of which are small and rural communities. Nationwide, annualized compliance cost estimates range from $195 M/yr to $675 M/yr. The Environmental Protection Agency (EPA) has estimated the compliance cost to consumers of small water systems (serving less than 3,300 people) to range from $58 to $327 per household/year. New and innovative technologies are needed to lower these costs.

Program: A nationally-advertised, open, competitive process to encourage innovation in arsenic removal strategies is the foundation of this program. Technologies investigated will be new or improved but not commercially ready, or may be adapted from non-drinking water applications.

A key feature of the program is to translate new and innovative technologies from the laboratory to the field. Promising laboratory bench-scale studies will be scaled up to demonstration field tests that provide performance and cost information under actual site operating conditions. These data, along with the input of and coordination with stakeholders including the EPA and water utilities, will provide the user communities with the information necessary to make sound decisions.

Three organizations with specialized capabilities are partnering to implement this program. The Awwa Research Foundation has proven research management expertise, a peer-review based competitive research program, and a wealth of water supply community experts. Sandia National Laboratories brings technology field-testing expertise and scientific R&D relevant to water treatment and analysis. WERC (A Consortium for Environmental Education and Technology Development) has extensive experience in education, training, technology development and deployment, economic analysis and outreach activities. Once success has been achieved in arsenic, this partnership can address additional emerging contaminants.

For Questions and More Information, Contact:

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Pilot Demonstration Project Website: http://www.sandia.gov/water/arsenic.htm

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