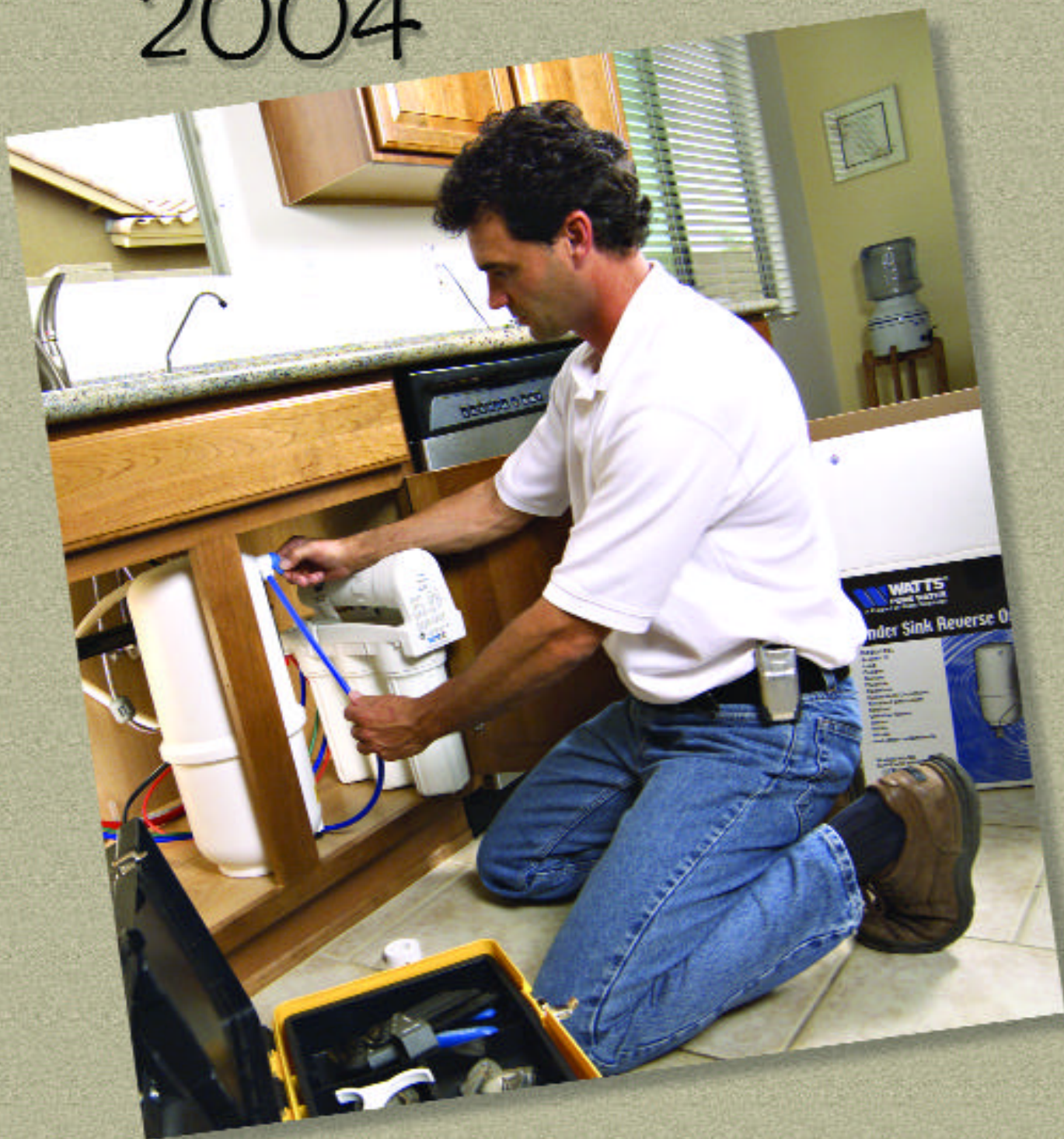


CLEAN WATER REPORT 2004



The Arsenic Rule

- Emerging Contaminants
- Eliminating Chlorine

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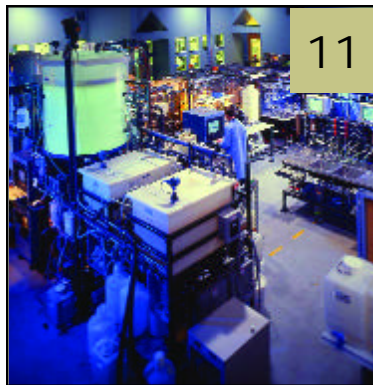
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Photo courtesy of Watts Pure Water

A plumbing professional installs the new 5-stage "Manifold" reverse osmosis system by Watts Pure Water.



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The ARSENIC RULE

by Ashley Anderson

It's been three years since the Environmental Protection Agency adopted a rule for arsenic in drinking water to be at a level of 10 parts per billion (ppb) or lower, and the water community has been busy developing technologies to meet this standard. The question is not if a viable treatment option exists, but what the most economical way to reach the level of compliance by the deadline is.

The standard, which has been at a level of 50 ppb for nearly 50 years, goes into effect at the lower level in January 2006 per the EPA Safe Drinking Water Act. Most metropolitan areas already are in compliance. It's the small municipalities, dry Western states and pockets throughout the Midwest and far Northeast that have to change something to reach the required level. For some of these small communities decentralized treatment, or treating the water through point-of-use applications in every home rather than at a central water facility, may be the only practical option.

"I think the trend is for cities and states and EPA — all — to be more open and even encouraging to home treatment," **Joe Harrison**, technical director of the Water Quality Association, says.

Families in areas with fewer than 100 households may pay as much as \$100 per month in a water bill for centralized treatment to treat arsenic, but around \$20 per month with a home water treatment, Harrison says.

These exorbitant costs have caused even the EPA to loosen the norm of treating at the central water facility. It released "Guidance for Implementing a



How plumbers can tap into the market of new technologies.

Point-of-Use or Point-of-Entry Treatment Strategy for Compliance with the Safe Drinking Water Act,” which says one of the benefits of using this strategy is that it is “substantially less expensive than building, expanding or upgrading a central treatment plant.”

The prospect of home treatment in these communities means plumbers could end up with the business if more homeowners and communities decide to go with a point-of-use application to reduce their levels of arsenic or simply just to improve the taste of their water.

Point-Of-Use Benefits: Take **Derek Sajdak**, a licensed plumbing contractor and owner of Aqua Science Inc. in Phoenix. He’s stepped into a joint venture with Watts Premier to lower the levels of arsenic in a community in Black Canyon City, Ariz., and as a result the company’s customer base has expanded past its existing 8,000 simply because people desire a better taste of water.

The project is part of a pilot study involving the reverse osmosis system from Watts. The company hopes to use the information gathered here to provide guidelines for other communities to consider the point-of-use applications as the solution to their arsenic-lowering needs, as well as for other contaminants, such as radon and lead.

The study has been going on since December 2002, and so far the results have been positive, reducing the incoming arsenic to below detection levels — with a detection level of 2 ppb, says **Shannon Murphy**, vice president of municipal programs at Watts Premier. He estimates 4,100 communities need to implement some type of treatment to meet the requirement and about 60 percent of these communities have a population of less than 500 people.

The people involved in the pilot studies are pushing the point-of-use applications as an economical solution for small communities.

“The biggest challenge is convincing them this is the most economical or the most effective way in treating the issue,” Sajdak says. “Once the pilot programs prove themselves, that’s evidence and ammunition we’ll have to go to the municipalities.”

A lot of the customer satisfaction of these pilot studies derives from the taste of the water. The American Water Works Association completed a study of large systems comparing conventional vs. unconventional treatments. The conventional treatment used a central filtration plant and the unconventional included a number of methods, including bottled water and home water treatment projects.

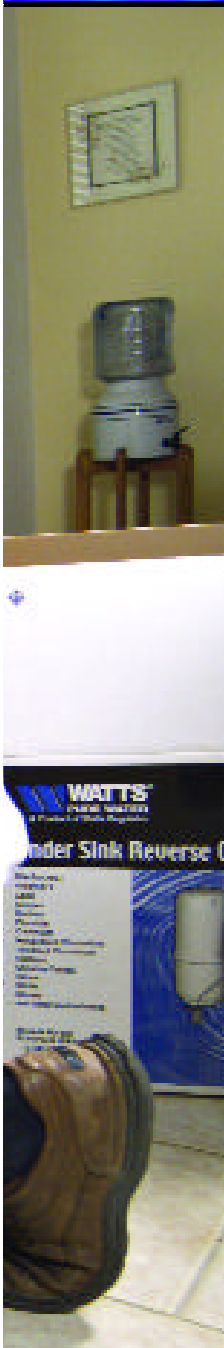
It studied these methods in Los Angeles and Contra Costa, a county in the southern part of San Francisco. In Los Angeles, a number of people have complained about the taste of their water and the home treatment methods satisfied them. This is further evidence municipalities might be willing to support home treatment.

“If a customer wants bottled-quality water and they’re willing to pay an extra \$20 a month, the city will provide them with home water treatment,” says Harrison.

Treatment Options: Watts is promoting its reverse osmosis system for arsenic reduction. It also offers a commercial reverse osmosis system that can also be installed in a central plant or prior to RV and mobile home parks, with an installation that isn’t any more difficult. Any plumber can do it, Murphy says.

Other treatments out there include using iron-based media at the wellhead. Arsenic sticks to whatever iron is around, so it is possible to take out all the arsenic by just removing the iron.

American Plumber has a system, WRO-3500 Reverse Osmosis System, and is also developing a filter cartridge system, for which it is seeking approval from NSF International for removal of Arsenic III. This is a level of arsenic found in approximately 30 percent of the United States in



The Arsenic Rule

nonchlorinated water. The filter cartridge system has almost no wastewater, while a reverse osmosis system wastes about 4 gallons of water for every gallon it filters.

Kurt Kaiser, product development manager of American Plumber, says a number of different areas require dif-

ferent treatments. Some areas, such as Las Vegas, will show pretty constant levels of arsenic and require a standard treatment. Other areas, such as the Fox River Valley in Wisconsin, might have more seasonal variations in the amounts of arsenic. These rural, single-well households need regular testing to

determine the necessary treatment.

The reverse osmosis systems can often treat for multiple contaminants. For instance, the Watts system can treat for several including radium, copper, barium and lead, among others.

The Future Of Point-Of-Use: Harrison thinks these multiple-contaminant treatments may open the door for more states to start approving reverse osmosis as a solution. He says the treatment option could work in a case such as the high lead level homes seen recently in Washington. He says the only way to control things like lead and scale deposits that build up and lop off in the distribution pipes is to treat the water as it comes out of the tap.

"I think the trend is that the doors are going to open for communities to start using this and for states to start approving it," Harrison says. He doesn't deny the administrative headaches involved with it — getting into the homes, proper maintenance of the systems and record-keeping — but thinks the trend is going to show places that wouldn't have considered home water treatment before using it.

In small communities that end up using home water treatment to become compliant with the standard, plumbers have an opportunity to become a leader in water quality needs for the community.

"Not only do you have 100 percent of a community where you've become the defacto water specialist for that community, you also have 100 percent repeat business in terms of working with that community for servicing the unit," says Murphy.

Of course, a plumber's involvement may be as simple as using it as an add-on service for customers. Sajdak says he thinks most plumbing contractors miss the filtration industry.

"They miss the value of the add-on water treatment," he says. "Once you have a customer and you're there in the home, you might as well give them additional products that they're going to purchase anyway."

An economical nightmare for municipalities could end up being a profit for plumbers. ♦

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