On Tap

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Drinking Water News For America's Small Communities

National Drinking Water Week, "Blue Thumb" Campaign Provide Educational Opportunities

by Diana Knott
On Tap *Editor*

This year National Drinking Water Week is May 3 through 9, and it provides a wonderful opportunity to make your community more aware about drinking water issues.

Many people in our country still take clean water for granted. Local officials and water system personnel should seize this opportunity to educate consumers about the importance of water conservation, the increasing regulations to protect the public health and the costs associated with those regulations, and how each of us can make a difference in protecting our water supplies. There are many ways to do this.

For instance:

• Call a local reporter and invite him or her to do an article about your water system. Many residents don't know where their water comes from or how it is monitored and treated.

• Work with your local radio station to develop public service announcements around National Drinking Water Week. Such public affairs announcements don't cost anything and can reach people at home, at work, and in their cars.

• Send a speaker to address local groups about water issues in your area.

• Get the public schools involved. Have a drinking water poster contest and display the entries at a library, mall, or town hall. Often when you reach children with a message, they take that information home to the family.

These types of activities can be performed throughout the year, not just during National Drinking Water Week. Consider organizing a community "Drinking Water Day." You may have knowledgeable volunteers field questions from

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When this photograph was taken, NDWC secretary Cheryl Trentini was drinking water for two. As her daughter grows up, she'll want to remember this "Blue Thumb" fact (see accompanying story): You can refill an eight-ounce glass of water approximately 15,000 times for the same cost as a six-pack of soda pop.

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Rural Development Administration's Regional Offices Are Announced

Plans to establish the Rural Development Administration's (RDA) regional offices were announced in March by Secretary of Agriculture Edward Madigan.

Mandated by the 1990 Farm Bill, the RDA is part of the U.S. Department of Agriculture (USDA) and was created by Madigan in December 1991. It includes the community and business development offices, programs, and functions that were formerly with USDA's Farmers Home Administration (FmHA).

The creation of RDA does not represent a change in programs; instead the new agency will specifically handle certain types of loans, formerly assigned to FmHA. Transferred activities include water and waste loan and grant programs, community facilities loan and loan guarantee programs, the business and industry loan guarantee program, intermediary relending program, industrial development grant program, and several other smaller programs.

"These [RDA] offices will assist rural areas and small towns throughout the nation in economic and infrastructure development," Madigan said. "This new regional-level organization will place decision-making closer to the communities these decisions will affect."

The seven regional offices will oversee the original processing on

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On Tap **is a publication of the National Drinking Water Clearinghouse, sponsored by Farmers Home Administration.**

NDWC's BBS, Technical Assistance Are Now Available

David Pask, P. Eng.,
Technical Services Coordinator

The National Drinking Water Clearinghouse (NDWC) is now offering information through its toll-free technical assistance service and electronic bulletin board system.

"We will be providing small systems with basic advice about what to do and where to go," said Technical Services Coordinator David Pask, P. Eng., about the technical assistance service. "If our resources don't allow for immediate assistance, we will investigate the matter, then get back in touch with callers."

Pask and two technical assistants will be available to answer regulatory questions about the specific requirements small drinking water systems must meet; financing questions, such as where communities might find funds to upgrade or build new water systems; and technical questions, such as what treatment processes alleviate specific water quality problems. The number to call is 1-800-624-8301.

When appropriate, callers will be referred to other organizations with which the NDWC has contact. Free or low-cost documents and videotapes that are available through the NDWC's Resource Center also may be recommended and/or sent to callers.

> *"We will be providing small systems with basic advice about what to do and where to go."*
>
> – David Pask, P. Eng.

The Drinking Water Information Exchange Bulletin Board System (DWIE–BBS) is another free resource. The bulletin board was developed so users may communicate with the NDWC and colleagues, known and unknown, Pask said.

Callers are encouraged to pose questions as well as pass along the solutions they've implemented to solve specific water problems. DWIE users may also "post" relevant news items and download information. A list of conferences, seminars, workshops, and exhibits are posted on the system, as are articles from *On Tap.*

Available 24 hours a day from anywhere in the United States, DWIE is accessible through a personal computer with a modem and communications software, such as ProComm™, CrossTalk™, VersaTerm-Pro™, or similar programs. Your software package should be set for the following parameters:

- Data Bits: 8
- Parity: none
- Stop Bits: 1
- Baud Rates: 300, 1200, or 2400.

Before users can initially access the system, they must first answer questions regarding the following:

- name;
- choice of password;
- occupation or business, selected from a list of codes that best describes the caller's affiliation;
- reason for accessing DWIE (if nothing else, curiosity will do for the first time);
- particular drinking water interests or involvement;
- phone and fax numbers;
- address and zip code.

"The log-on process is not difficult, as you are led through it by a series of menus, from which you type the letter that best describes the information or facility you wish to access," Pask said.

To access DWIE–BBS, phone 1-800-932-7459 or 1-304-293-7108. If you have questions or need help accessing the system, call 1-800-624-8301. ■

The National Drinking Water Clearinghouse is located at West Virginia University and was established in 1991 with funds from the Farmers Home Administration.

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Rural Development Administration

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many RDA loan and grant programs, ending administrative duplication and resulting in a more efficient program delivery system, Madigan said.

The new RDA office locations and the regions they will administer are:

- **Western Region**— Klamath Falls, Oregon
- **Southwest Region**— Levelland, Texas
- **North Central Region**— St. Joseph, Missouri
- **Delta Region**— Vicksburg, Mississippi
- **Southeast Region**— Aiken, South Carolina
- **Mideast Region**— Huntington, West Virginia
- **Northeast Region**— Sayre, Pennsylvania.

See the map on this page for a break down of the states and territories included in each region.

The regional boundaries reflect the distribution of the nation's rural population and the areas of greatest economic need. In grouping the states, RDA considered similarity of programs and each state's average caseload.

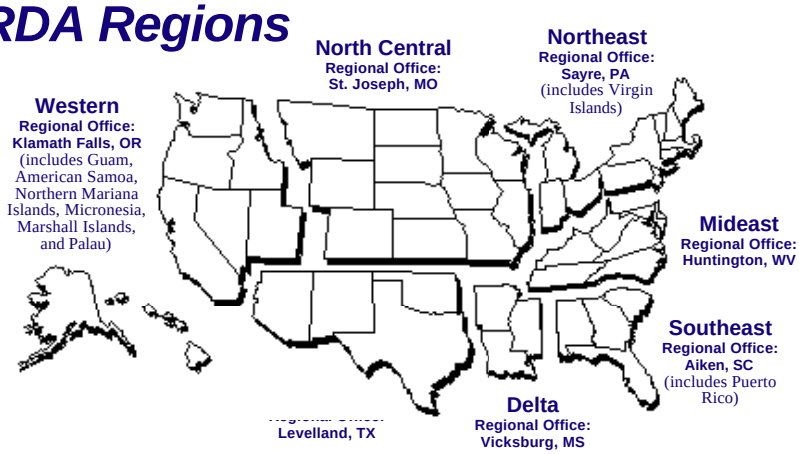
The seven regional offices are expected to become fully operational by October. They will also serve as direct liaisons with state governments and State Rural Development Councils (RDCs), said Madigan. These councils include representatives from the federal, state, and local governments and the private sector within each state. In February, Madigan announced their formation in 34 states and two U.S. territories; eight other states already had councils in place on a pilot basis.

RDA members participate on RDCs, whose goal is to develop rural resources. By collaborating, the councils can pool existing government and private sector resources and apply them toward locally identified needs.

Creation of the RDA will have no impact on FmHA's housing or farmer programs or on the operations of its county offices. RDA will maintain a continuing close relationship with FmHA, which will provide most of RDA's administrative services, and in many cases, RDA area offices will be co-located with FmHA state and district offices.

FmHA employees will continue to be a valuable source of information on rural development, and they will provide referrals to the nearest RDA representative when appropriate. During the transition, while RDA establishes its seven regional offices and numerous multi-county area offices, FmHA will continue to service loans and respond to borrowers in community and business programs; therefore, no interruption of funding or service will occur. ■

RDA Regions



Source: USDA Office of Public

Phase II Standards Become Effective July 30

Phase II standards of the National Primary Drinking Water Regulations become effective July 30 of this year. Included are requirements for 33 contaminants; five additional contaminants will be regulated beginning January 1993. Of these 38, 27 are newly regulated contaminants; 11 are revised.

Beginning in January 1993, community water systems and nontransient, noncommunity systems must monitor for all 38 contaminants, while transient, noncommunity systems (see box on page 13 for definitions of these system types) will be required to monitor for nitrate and nitrite, says a U.S. EPA fact sheet. It is estimated that monitoring will cost communities less than $10 per household per year.

Phase II requirements establish 17 pesticide Maximum Contaminant Levels (MCLs), 12 of which are new and five, revised. It is expected that noncompliance with these MCLs will result in the most violations. However, the greatest benefits should also be derived from these requirements.

According to the EPA fact sheet, the Phase II regulations are expected to result in approximately 75 fewer cancer cases per year.

In addition to the MCLs for pesticides, Phase II also:

- establishes eight inorganic MCLs (two new and six revised);
- establishes 10 new volatile organic MCLs;
- establishes a new MCL for PCBs;
- establishes treatment technique requirements for two contaminants; and
- deletes the MCL for silver.

EPA estimates that about three percent of all public water systems will be required to provide treatment or find an alternate source of water. This treatment is estimated to cost between $10 and $800 per household, depending upon various factors, including system size and the degree of contamination. However, according to the fact sheet, some exemptions will be allowed for small systems based on costs, provided that no unreasonable risk to human health exists.

The specific Phase II requirements and its costs and benefits will be examined in the next issue of On Tap. ■

PART TWO: Questions Small Water Systems

by Beth Cahape
NDWC Staff Writer

In this second in a series of articles on the new U.S. Environmental Protection Agency (EPA) Lead and Copper Rule, we take a closer look at this regulation's corrosion control treatment requirements, specifically from the perspective of lead toxicity. This article was prepared with the assistance of George Rizzo of U.S. EPA Region 3.

How do we know we have exceeded safe levels?

As we discussed in the March issue of *On Tap*, water systems whose customer tap samples exceed EPA action levels in the "initial base monitoring" period (the first 6 months of monitoring) will have to work with their state primacy agency to devise and maintain an effective corrosion control treatment program. Those action levels are 15 parts per billion (ppb) or 0.015 milligrams per liter (mg/l) for lead and 1.3 mg/l for copper.

The critical measure for lead (and copper, as well) will be an examination of sample results at the 90th percentile. This means that if more than 10 percent of your samples are over 15 ppb in lead content, you will have to establish a corrosion control treatment program. State regulators will, however, only be looking at the sample which falls at the 90th percentile point (see box on this page).

EPA's Lead and Copper Rule Manager for Region 3, George Rizzo, suggests that establishing a treatment program in response to high levels of lead in customer tap samples will probably be the *most challenging aspect of this rule* for small system operators (especially for the operator who has never done any sort of water treatment before).

Is exceeding the action level a violation?

No. If your 90th percentile sample is over 15 ppb, it doesn't mean you're out of compliance. Violations at this early point in the monitoring program will only happen if a system *doesn't* do one of two things:

• if it does not sample within the required time period for the "initial base monitoring" or

• if a system exceeds the action level and does not begin corrosion control treatment.

How likely is it we will exceed action levels?

Much depends upon the type of source water your system uses. If you have a high mineral content in your water—commonly referred to as "hard water"—then your water is not as likely to be corrosive. Those minerals present in the water can act as buffers to any corrosive elements that might be there. Some minerals will also coat pipes.

If your water has very few dissolved solids, commonly called "soft water," then it will tend to be much more "aggressive." A situation like this might be present in a system using surface water whose watershed comes from base rocks that are granite (igneous). It is almost guaranteed that the water from this kind of region would be low in minerals because this kind of rock is very hard, quite unlikely to break down.

There is very little or no buffering capacity in soft water, and slight changes in acidity can easily harm a distribution system or private plumbing with its corrosive action. Thus, lead that may be present in the service lines, pipes, or soldered joints can easily leach into the water.

While there is no blanket answer as to whether or not you'll have to treat your water, you can use the above indicators. Referring to a system with soft water, Rizzo says, "My guess would be that if the system has a sufficient number of lead lines, or copper/lead soldering, they will have to do corrosion control treatment."

When do I tell my customers?

The first and most important requirement that a system must comply with is establishing a public education program for its community. We will look at the various public education requirements of this rule in an upcoming issue of *On Tap*, as well as examine ways a system might carry out a community-wide educational campaign for this or other contaminants.

Basically, though, a system must give the public information about the adverse health effects of lead, and teach their customers how they can reduce the risk of lead in their homes and businesses.

What other requirements must we meet?

A small- or medium-sized water system whose lead or copper levels exceed the lead action level of 15 ppb will be required to:

• start water quality parameter monitoring tests

• submit to the state primacy agency a proposal for a corrosion control treatment program; and

• begin source water monitoring.

What are "water quality parameter" tests?

Water system operators need to monitor for what EPA calls "water

Determining your lead levels at the 90th percentile:

For clarity, we've printed this reference for operators to use after their initial base monitoring results are received. After an operator lists each sample's lead level, from lowest to highest, on a chart, he or she should look at the following sample numbers:

System Size (Population)	Samples Required	Sample Indicating 90th Percentile
>100,000	100	90th highest sample
10,001 to 100,000	60	54th highest sample
3,301 to 10,000	40	36th highest sample
501 to 3,300	20	18th highest sample
101 to 500	10	9th highest sample
≤100	5	average of 4th and 5th sample

Are Asking About the New Lead Regulations

quality parameters" (WQP) when their system exceeds the 15 ppb lead action level. Essentially, these tests show the operator the basic physical qualities of the water. With this information, a treatment technique can be developed specifically for that water system.

Testing for water quality parameters is required because there are no blanket solutions for corrosive water. There is another benefit in conducting these tests, as well: submitting WQP results to the state primacy agency proves to regulators that the operator's treatment plan will, indeed, work!

Basically, should one of the WQP tests (for example, pH) be at an unusual level, an operator can then respond with a chemical additive. Operators might have to do repeated WQP tests—to determine the effects of various treatments—before they come up with a treatment regimen that works consistently for them.

Water systems that must conduct WQP tests *must take samples every two weeks for six months* before submitting a treatment plan to the state. Samples for WQP tests must be taken at entry points to the distribution system and at representative customers' taps (which can be the same sites used for total coliform sampling).

How does "Optimum Corrosion Control" fit into this?

The term "optimum corrosion control" is what EPA uses to describe the treatment plan you develop and recommend to the state primacy agency after you have done extensive WQP tests. This is the second step in compliance, and you have six months to do this stage.

Say you have a system that exceeds the lead action levels. The first period of base monitoring samples show they have a 20 ppb reading of lead at the 90th percentile.

When they begin their initial WQP testing, they decide that their pH readings are too high and that they will try adjusting this parameter. They try an additive, and then take another WQP reading (at least within two weeks). This has reduced their pH levels in the next round of WQP tests, so they take some additional tap samples to test for lead, and they find that they've gone down to 18 ppb.

These levels are still too high, so the system may decide to try an additional treatment to increase the orthophosphate parameters. Consequent WQP tests show that this is achieved. When the next round of tap water monitoring takes place, they find that lead levels are now 12 ppb, and their two treatment techniques constitute their "optimal corrosion control" treatment program.

If your treatment continues to be effective in reducing lead levels for two consecutive six-month monitoring periods, you may—if state regulators give their approval—reduce the number of tap samples you collect during those six-month periods. If your tap water sampling shows reduced lead levels continuously for three years, the number of tap samples—as well as the frequency of collection—are reduced even more.

Tap sampling for water quality parameters

System Size (Population)	No. of Tap Sampling Sites (Initial Base Monitoring)	No. of Tap Sampling Sites (Reduced Monitoring)
10,001 to 100,000	10	7
3,301 to 10,000	3	3
501 to 3,330	2	2
101 to 500	1	1
≤ 100	1	1

Source: U.S. Environmental Protection Agency

What do we test for?

EPA has picked those parameters, or limits, for these tests that will show how "aggressive" your water is. Systems must collect one sample every two weeks for each of the following items (recommended sample volumes are included):

- Water Temperature..... 1000 ml
- pH..... 25 ml
- Alkalinity..... 100 ml
- Calcium ..... 100 ml
- Orthophosphate ..... 50 ml
- Silica..... 50 ml
- Conductivity..... 50 ml

Both of the first two tests (temperature and pH) may be done by the water system operator, provided the operator uses a combined temperature/pH electrode and meter. In the case of temperature testing, a simple hand-held thermometer may also be used. Large municipal water systems are doing all these tests themselves, but most small- and medium-sized water systems will need to hire a private lab. It needn't be an EPA-certified laboratory, provided the lab follows the rules EPA has established for these tests.

These ranges, again, do not indicate exactly what an operator must do to treat the system's water, but they will be helpful when an operator creates an optimum corrosion control program. Additionally, these WQP tests must be submitted to the state regulators so that the water system's treatment proposal can be evaluated.

When do we submit treatment proposals?

Small- or medium-sized water systems each have six months— from the date they exceed lead or copper action levels—to submit their treatment proposal to state regulators.

The state may simply approve the plan, and the system can go on to the next stages of compliance. On the other hand, the state can require a different treatment altogether, or require the system to conduct more extensive treatment studies to come up with an optimal treatment.

What sorts of treatment techniques will be required?

No specific treatment techniques will be required in the WQP second step (that is, in the first six months of WQP tests). However, there are a number of options that operators can try. They may treat their water by reducing the water's corrosivity

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Helping Water Systems Cope:

A Day in the Life of a Circuit Rider

by Beth Cahape
NDWC Staff Writer

Through its state affiliates, the National Rural Water Association (NRWA) administers the Circuit Rider Technical Assistance Program. (See box on page 7 for more about NRWA.) For part two of our look at this program, Circuit Rider David Holt allowed On Tap *staff to accompany him on a typical day of technical assistance rounds for the West Virginia Rural Water Association (WV-RWA).*

Operator Bill Long shows West Virginia Circuit Rider David Holt several potential sites for drilling wells on the grounds of his water treatment plant. His system depends on surface water, which now has a high sodium content.

David Holt starts his day early, usually in some place far from his home in Greenbrier County, West Virginia. On this December morning his route will be in and around the central part of the state.

He points to the boxes he'd just been rearranging in his van: "Junk Man is my CB handle," he laughs. "I always carry a lot of spare parts—condensers, resistors, transistors, pieces of turbidity meters, solder guns. . . . It's junk to some people, but not to me. You never know when you're going to want it for some repair work."

"If you're a circuit rider, there are a lot of things you should be. You ought to be a native, know your state, and you should know equipment and treatment . . . and you really need to be a junkman!"

Once inside the truck's cab, Holt scans his list of requests. There are four possible stops for the day, depending upon how long the earlier ones will take. The first is a water system with 500 hook-ups, and Holt needs to do a follow-up to see how the new chlorinator is working.

As Holt navigates his van along mountain back roads, he says, "I've been a farmer, logger, worked in heating and cooling, and finally, in 1979, I got certified as a water plant operator for the state prison in Pence Springs." Years later, he worked as an operator for the town of Alderson and neighboring White Sulphur Springs.

When I first started as a circuit rider in 1989, one of the WV-RWA board members told me: 'You know what needs to be done. Just go out there and do it!' They were kind of worried about me, though. The last circuit rider got burnt out on the traveling in three years, and they thought I might, too. But I was made for this job. I'm totally on my own, my own boss, thanks to a good board of directors. . . .

"I have to do 35 on-site calls to systems every month, but the circuit rider program's very stable in this state. I usually do more than that.

"I telephone the office every day to find out if I have had any more requests, and then I hit the road. Mostly how I work now is through requests. Of course, if I pass by a system I haven't been to before, I'll make a howdy-doody contact. Let them know who I am. Anymore, I drive three to four thousand miles a month."

The Day's Work Begins

At the first stop, water operator Dan Riter greets us in his office, offering coffee and apologizing for his wrinkled appearance.

"I'm pretty worn out. We had a fire up in town and I've been up all night fixing leaks around the hydrants," says Riter. "I got them pretty much taken care of." He sighs, "I can't teach these volunteer firemen to turn off the hydrant valves slowly."

Holt checks the chlorine pump, and quizzes Riter on its efficiency. Riter explains that he's having a problem keeping up chlorine levels in one distribution area. Holt replies, "You know that old line out there is eating up your chlorine."

Although this town has been able to install a much needed new plant, there aren't enough funds to replace ancient water mains that are leaching iron, and this depletes the chlorine treatment. Holt offers another alternative: ". . . it'd save you a lot of money to just put another chlorinator in the old plant over there."

Riter nods as he and Holt walk outside. "Yeah, I'll think about it," says Riter. "Of course, the two local chemical companies keep having these chlorine wars. The price is pretty cheap right now. . . ."

Once on the main road, Holt shakes his head. "Dan's a good operator. Works hard. I hope they don't loose him."

Keeping Good Operators

Montana's circuit rider, Harry Whalen, echoes this perspective on loosing operators. "The local water boards can't understand that operator turnover is awfully, awfully expensive. They almost never give raises. They just don't understand that they gotta have somebody who will stay there."

"A lot of these systems will pay an operator four, maybe five dollars an hour," Holt explains. "As a rule, you generally get what you pay for."

Although the operator situation is difficult now, Holt worries more about the future. As the Safe Drinking Water Act (SDWA) requirements get stricter, he explains, keeping a system in compliance will require even more of qualified operators.

How Long Is a Piece of String?

Before arriving at the next water system, Holt shares some of its history. "I face emergencies pretty often: such

as a water line that bursts and drains a tank. I usually get these kind of situations once or twice a month.

"The water system in this town had one the other day. Their filter blew up, and they were working with just one. . . . They couldn't supply enough water. It's a 30-year-old plant with the original filter, and it was totally shot. They haven't maintained it or the place at all.

"So, last week I helped them put in a new filter. We're going to add a potassium feed this morning to eliminate the iron/manganese problem they're also having."

When asked how much this repair work would cost if done by a private firm, Holt replies, "How long is a piece of string? Any length you want, right? And putting in a new treatment system like this can be any price you want to pay."

Holt shares a frustrating story about a water system where he had just helped the operator choose and install a treatment program. A salesman, arriving weeks later, offered to sell the management something "that'll beat what you just got, only cheaper." Holt explains that the salesman's solution wouldn't have worked and ultimately would have cost the system more, but "a lot of these operators and officials are vulnerable to this kind of thing."

A Troubled Small System

Nearing the system, Holt muses: "I've been to this system at least four times now. It started out with a water leak, then we helped clean up their water because it failed a coliform test and they had a "boil water advisory" slapped on them by the health department. I helped them replace the filter media next, and today we'll set up this treatment. The operator here is handling both the waste treatment plant and the water plant. He's a hard worker, but he's got his work cut out for him."

Once at the system, Holt is greeted by more people than just the operator, Carl Williams. Also on hand is a member of the local city council, a chemical salesman, and Larry Rader, program manager for WV-RWA. They expect the town's mayor to come by soon, along with a local public health department official. This system serves a community of 11,000 residents. With its recent problems, the health department has been monitoring the system's progress more often.

Today, Holt and Rader will work together. Rader explains that, although this community's water is now safe, there have been many complaints about its taste and color.

"Regulators can force you to make the water safe," says Rader, "but they can't force you to make it drinkable."

But What Will It Cost?

With a recently failed water supply, a "boil water advisory," and numerous complaints about the general quality of the water, the officials in this small community have decided, with some trepidation, to invest some funds in their troubled water system.

Not surprisingly, the first question the mayor asks when he arrives is "How much will it cost us?" Holt and Rader have calculated costs for the additive at around six cents per thousand gallons. The mayor grimaces.

"We're planning on raising our rates somewhat, but you just can't triple your water bills," the mayor says. "We've been applying for years for some grant money but haven't gotten anything."

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National Rural Water Association at a Glance

The National Rural Water Association (NRWA) is a non-profit trade organization. Specifically, NRWA is made up of state affiliates serving small municipal water and wastewater utilities throughout the 48 contiguous states. It also operates programs in Alaska, Hawaii, and Puerto Rico.

NRWA provides a number of training and technical assistance programs through its state affiliates, offering training to more than 35,000 utility personnel annually. Additionally, on-site technical assistance calls number 45,000 each year. This assistance is offered via programs in water, wastewater, and groundwater protection.

Some of the activities and publications offered include:

- the Circuit Rider Technical Assistance Program for both water and wastewater utility operators and managers;
- the Operation Impact Program, which assists members in prompt compliance throughout the regulatory process;
- specific technical assistance for Farmers Home Administration (FmHA) borrowers;
- a quarterly magazine, *Rural Water*, which serves technicians and managers of water systems;
- a monthly newsletter, *NRWA Bottom Line*, which addresses key issues affecting the water and wastewater industry;
- multiple booklets and manuals on technical, managerial, and financial aspects of water and wastewater systems;
- an annual technical conference, which puts buyers in contact with exhibitors of various equipment and products; and
- other benefits, such as retirement programs, insurance packages, and an annual Washington, D.C., Rural Water Rally to promote awareness of rural water issues.

With a membership of 9,000 rural and small utilities, it is the largest utility membership organization in the country. Thus, another aspect of its mission is to work closely with the regulatory community to voice rural and small systems' concerns.

For more information about NRWA, call (405) 252-0629, or write to them at P.O. Box 1428, Duncan, Oklahoma, 73534. For the number of your state Rural Water Association office, call the National Drinking Water Clearinghouse at 1-800-624-8301.■

Four Years After Drinking Water Survey

More Awareness But Resistance, Problems Remain

by Diana Knott
On Tap *Editor*

Editor's note: To gauge progress it is necessary to see where we have been. With this in mind, a previous survey about drinking water issues is summarized below with a few regulatory updates. When reading, ask yourself how attitudes and awareness about drinking water issues have changed in your area, and what still needs to be accomplished.

Four years after a survey of water utility officials and state drinking water administrators was conducted to gauge their views on the Safe Drinking Water Act Amendments of 1986, "there is a lot more awareness on the part of water utility officials, but still a lot of resistance because of the high costs," said Cynthia Sanford, groundwater project manager with the League of Women Voters Education Fund (LWVEF).

"One of the controversial findings of the survey was that there was very little support for the amendments," said Sanford. At that time many in the water industry didn't even seem to be aware of them, she said.

The League conducted its first nationwide water resources study in 1956. This knowledge, coupled with the recent survey results, led the League to propound a number of recommendations in its 1989 survey report, titled "Crosscurrents: The Water We Drink." Today, said Sanford, "a lot of the same issues still need to be addressed."

For instance:

• funding is still needed for wellhead protection and sole-source aquifer programs;

• utilities need to realize the importance of long-term financial plans that provide for adequate maintenance, replacement, and upgrading of water treatment facilities;

• the public needs to be educated about the various costs involved in treating and delivering drinking water;

• water conservation should be stressed as a way to reduce current demand and to prepare for future needs;

• local, state, and federal governments need to work together with the private sector to help small systems implement new regulations;

• mechanisms need to be established to protect drinking water supplies.

Survey Represents All 50 States

Conducted in late 1987 and spring 1988 as part of LWVEF's three-year Safe Drinking Water–Community Education Project, the survey represented 572 local water utility officials in 49 states and state drinking water administrators in all 50 states plus the Virgin Islands.

The survey encompassed four major areas:

• responding to chemical contamination,

• protecting drinking water sources,

• financing drinking water quality improvements, and

• forging a national policy on drinking water.

Responding to Chemical Contamination

It has been reported that more than 2,100 different contaminants have been found in public water systems since the mid-1970s. A 1984 National Cancer Institute survey, cited in the Crosscurrents report, found a total of 1,565 organic chemicals in drinking water, 117 of which have known health effects. When the LWVEF survey was conducted, 31 contaminants were regulated by U.S. EPA; by January 1993, that number will have grown to 64.

The survey examined three major types of chemical contamination problems:

• organic chemicals, such as pesticides, gasoline, industrial solvents, and household products;

• trihalomethanes, byproducts of the water treatment process itself;

• and lead, which can contaminate drinking water after it leaves the treatment plant.

When asked to name the five *unregulated* organic contaminants most commonly found in their states' drinking water supplies, 42 state administrators mentioned a total of 51 contaminants. The most commonly cited ones are listed in the box on page 9. Four of the five most frequently named have since been regulated. Maximum Contaminant Levels (MCLs) for six more become effective July 1992 (see related story on page 3).

Chlorine, a staple of U.S. water treatment since its introduction as a water supply disinfectant in 1908, has worked wonders in eliminating waterborne diseases such as cholera and typhoid fever. According to the Crosscurrents report, 91 percent of the surveyed utility officials reported using chlorine-based disinfectants. However, this has been shown to create other problems.

When chlorine combines with organic matter in water, such as decaying plants or animals, it forms substances called trihalomethanes (THMs). These have been shown to cause cancer in laboratory animals; chloroform, a common THM, has been linked to bladder cancer in those who drink from treated public water supplies.

The EPA standard for total trihalomethanes (TTHMs), which also include bromoform, bromodichloromethane, and dibromochloromethane, is .10 milligrams per liter and applies only to systems that apply disinfection and serve more than 10,000 people.

Since December 1990, all systems using surface water, or groundwater that is under the influence of surface water, have been required to provide disinfection under EPA's Surface Water Treatment Rule. However, according to a May 1991 EPA fact sheet, new regulations concerning disinfection byproducts will likely be proposed in 1993, the same year in which proposed groundwater disinfection regulations are scheduled to appear. If the proposed regulations are finalized in 1995 as expected, it is likely that disinfection processes will become more widespread at the same time in which disinfection byproducts become more tightly regulated.

Another drinking water contaminant that can create serious health problems is lead (see related story on page 4). This element usually enters water from private plumbing, where it is found in the solder used to connect copper pipes, and from the corrosion of lead in distribution system pipes and joints.

Still, of those who rated their treated water as moderately or highly corrosive in the LWVEF survey, only 21 percent and 58 percent, respectively, reported that it was corrosive enough to cause concern.

Protecting Sources

It makes sense that if water is as clean as possible before it enters the

drinking water treatment plant, it will be less expensive to treat and ultimately safer, since not all contaminants can be removed with current treatment technologies and budgets. However, only 25 percent of survey respondents said their water systems had the authority to control land and water uses that threatened their supplies; less than half said they monitored activities that could contaminate their water sources.

The most frequently cited threats to water supplies were:

• industrial and municipal discharges,

• agricultural runoff,

• leaking underground chemical and fuel tanks, and

• landfills.

Monitoring untreated water for basic characteristics such as turbidity and pH level was the most common action taken by systems to protect water supplies, but only 19 percent of state administrators believed such monitoring was effective. ". . . utilities may be relying too much on this monitoring to protect water supplies rather than focusing on the human activities that could contaminate them," says the Crosscurrents report.

An absence of local or regional planning, not having industrial support, and a lack of funding were cited as the major impediments to water source protection.

Financing Improvements

According to the Crosscurrents report, the EPA Office of Drinking Water estimated that more than $5 billion in total capital costs, with an additional $920 million in annual operation and maintenance costs, will be needed nationwide to comply with the 1986 Amendments to the Safe Drinking Water Act. Others' estimates are even higher.

In nearly every state, the survey found that many small water systems were already experiencing serious financial problems that interfered with adequate treatment and maintenance. Most of the small system officials who were interviewed knew of no state efforts to help their utilities financially or technically, and more than half of small system operators reported that their current rate structures were inadequate to meet future needs.

Most commonly cited unregulated contaminants found in drinking water supplies.

Contaminant	*# of States*	*Listed Sources*
*Trichloroethylene	28	Industrial solvent
**Tetrachloroethylene	20	Industrial solvent
*Benzene	18	Gasoline tanks, degreaser
*Trichloroethane	14	Industrial solvent
*1,2 Dichloroethane	9	Industrial solvent, gasoline tanks, agriculture
**Toluene	8	Gasoline tanks
**1,2 Dichloroethylene	6	Industrial solvent
**Xylenes	6	Gasoline tanks
Chloroform	5	Disinfection byproduct
**Ethylene Dibromide and **Atrazine	4	Pesticides

*These volatile organic chemicals (VOCs) have since been regulated.
**MCLs for these contaminants become effective July 1992.
For information about specific MCLs, call the National Drinking Water Clearinghouse at 1-800-624-8301.

Droughts, dwindling water sup-plies, and the ever growing costs of treatment and new water source development have resulted in many water systems actively encouraging conservation as an economical alternative. But when the LWVEF survey was conducted, only 36 percent of the respondents reported conducting water conservation public education programs, and a mere 14 percent were encouraging conservation through financial incentives. On the other hand, more than half of those surveyed reported that their utilities were planning additions to plants to meet future needs.

Forging National Policy

Of the new Safe Drinking Water Act provisions, survey respondents expected disinfection and filtration requirements would provide the greatest health benefits by reducing waterborne disease outbreaks. More common among customers of small public water systems (under 3,300 customers)—which account for more than 85 percent of all U.S. public water suppliers—"outbreaks" occur when two or more people contract similar illnesses after consuming drinking water from the same source that contains the disease-causing organisms.

While there was widespread agreement about disinfection and filtration benefits, few surveyed utility officials believed they would be affected by radionuclide standards. However, according to a 1991 EPA fact sheet, if the recently proposed standards are implemented, approximately 80,000 public water systems will have to monitor for various contaminants. Total costs of the proposed radionuclide regulations to all public water systems are estimated to be $317 million a year, with about 75 percent being borne by systems serving fewer than 10,000 people. Initial state implementation costs are estimated at between $15 million and $28 million.

The Future is Here

Today drinking water regulations continue to be proposed, finalized, and made into law. Despite stretched budgets, states and communities will have to find ways to comply with these regulations or face penalties and possible liability for consumer ills.

For small systems, the task of compliance can seem especially overwhelming. But through appropriate planning, budgeting, and education, the challenge can—and must—be met.

The Crosscurrents report can be ordered for $4.95 plus a $1.00 shipping and handling charge. Call the National Drinking Water Clearinghouse, 1-800-624-8301, for more information.

To learn about League activities in your area, contact your local or state LWV office. For information about your state office, contact the National Drinking Water Clearinghouse. ■

An Overview of the Farmers Home Administration's Loan and Grant Program for Water Facilities

Farmers Home Administration (FmHA), an agency of the U.S. Department of Agriculture, operates federal loan and grant programs designed to develop and improve community facilities, strengthen family farms, finance new and improved rural housing, and maintain and create rural employment (see related story on page 1). The agency's goal is to serve as a temporary source of supervised credit and technical support for rural Americans until they are able to qualify for private sector resources.

Specific water and waste disposal loans and grants are available for communities to build, repair, improve, expand, or change water system facilities. In fiscal year 1992 (which concludes on September 30, 1992), FmHA had $600 million for direct loans and $350 million for grant monies.

Standard requirements for eligibility include:

• the facility must be located in a rural area, city, or town with a population of 10,000 or less;

• only public bodies, non-profit organizations, and Indian tribes are eligible for financial assistance;

• priority for funding is given to projects located in small, low-income communities experiencing an identified health or sanitary problem;

• applicants must be unable to finance the proposed project from their own resources or through commercial credit at reasonable rates and terms;

• loan recipients must agree to refinance their loans at some future date when it appears to the government that they are able to refinance at reasonable rates and terms. This is considered "graduating" from the program and is a statutory requirement of the FmHA program.

An additional $35 million in guaranteed loans was made available for the first time in 1991. Unlike direct loans—which are channeled from the government to the borrower and typically go to communities that do not qualify for a bank loan—these guaranteed loans will come from an eligible lender, such as a bank. The government, via FmHA, guarantees the bank against a loss for up to 80 percent of the loan.

For those communities who face a serious financial crisis—which has developed within the last two years—FmHA is now offering an Emergency Community Water Assistance Grant. The community's population has to be less than 5,000, and grant awards can be up to $500,000.

Finally, FmHA funds several technical assistance and training grant programs. The Wastewater Technical Assistance Program and the National Drinking Water Clearinghouse, which produces this publication, are two such programs.

More information about FmHA water facility funding will be included in a future issue of On Tap. *Meanwhile, for more information, contact your county or state FmHA office; the National Drinking Water Clearinghouse, 1-800-624-8301, can provide the telephone number and address of your state office.* ■

Water Company Helps Travelers

A Pennsylvania water company is providing another public service, but it has nothing to do with water.

According to a recent Associated Press article, Laurel Management Company of Johnstown, PA, which operates the water system for Johnstown Water Authority, is encouraging people to ask its employees for directions. About three years ago decals that say, "Need directions? Ask us." were placed on company trucks.

Because of the employees' knowledge of the city, the company thought it would be a nice way to help the public, says company president Jack Sloan in the article. If an employee can't help the traveler, he or she can radio the company's dispatch center so someone there can look it up on the company's maps, he said.

Johnstown Water Authority serves about 22,000 customers. ■

Environmental Financing Information Available Via Computer

The U.S. Environmental Protection Agency (EPA) has established an online database to provide free information about financ - ing alternatives for state and local environmental programs and projects.

Called the Environmental Financing Information Network, or EFIN, the database provides three types of information: contacts and experts who are knowledgeable about public financing and environmental programs, case studies that describe successful ways to finance environmental programs and projects, and abstracts of pertinent publications. Ordering information is included with each entry. EFIN is available to state and local officials, consultants and engineers, the financial industry, associations, educational institutions, and the public.

EFIN is sponsored by the Office of Water (drinking water and wastewater treatment programs), with participation from the Offices of Solid Waste and the Office of Administration and Resources Management (public-private partnerships program). The EFIN Center hotline number is (202) 260-0420. To access the EFIN database, one needs a computer with communications software and a modem. Call the EFIN Center at the number above for access information.

Several organizations are currently transferring EFIN information to their members and system users. Through a cooperative agreement, EFIN's computer network is also accessible through the National Small Flows Clearinghouse's (NSFC) Wastewater Treatment Information Exchange Bulletin Board System (WTIE–BBS). Funded by EPA, the NSFC provides information and technical assistance to those who work with small community wastewater treatment systems. To access EFIN through the WTIE–BBS, call (800) 544-1936. For assistance or to find out more about the NSFC, call 1-800-624-8301. ■

Helping Water Systems Cope

Continued from page 7

Even with a community demanding a better water supply, Holt explains that water rate increases are difficult to push through in most small towns. "There's a problem in this state. Most of these systems are underfunded, and a lot of them are mismanaged or they lack a maintenance program. They can't afford better . . . or claim they can't afford it. But they won't go with a rate increase. You always hear 'Everybody's on a fixed income!'"

This is a dilemma described by circuit riders across the country. In Pennsylvania, Steve Krchnavy explains, "It's very hard for an elected official to go into a council meeting, slam the gavel down, and announce 'We're raising water rates six dollars!'"

"You'd think paying 10 to 12 dollars a month for water was the end of the world," echoes Whalen in Montana, ". . . but customers never bat an eye about paying their $35 monthly cable television fee."

Testing for leaks at a small water district, Holt uses his detection equipment to check a fire hydrant. "Unaccounted for water loss" of 20 to 30 percent is common in small West Virginia water systems.

Education is Key

Hours later, after assisting Williams in the installation of the treatment feed pump, figuring costs, and evaluating the water color in the detention tanks outside, Holt gives him some final instructions. Williams listens carefully as Holt explains how to evaluate the general treatment after the additive has spread throughout the distribution system.

> *"You'd think paying 10 to 12 dollars a month for water was the end of the world . . . but customers never bat an eye about paying their $35 monthly cable television fee."*
>
> – Harry Whalen
> Montana's
> Circuit Rider

With so many people at this second system today, Holt has taken a lot of time to answer questions and respond to the concerns of each of the visitors, putting him behind schedule. He loads up his van to head to his third—and last—stop of the day, some 60 miles west.

Speculating on what the second system still must do to comply with current SDWA regulations, Holt shakes his head. "I don't know if there's a solution to it. We've got lack of money, lack of management, and council members and mayors don't always listen.

"The Environmental Protection Agency [U.S. EPA] is going to start cracking down on these systems pretty hard. Then, these officials will probably start listening."

However, educating the public is another way to change things, says Holt. "How we do that is a good question. And I'm not really a teacher. It's the circuit rider's place to help, but we need more help.

"What's the public going to do about it? They should be educated as to what to expect, and make arrangements to see to it that their community gets somebody in there, an operator, who's qualified to do it and knows what he's doing. But it's absolutely the operator's responsibility to produce clean, clear, pure water."

The Operator's Advocate

As for his role as a circuit rider, Holt says that "the main thing is to show them how to do it, not do it for them. Anytime I've got a leak detection job, I'll usually find the leak, then I'll let the operator have the leak detection device and tell him to go until he finds it himself. That way, he knows what it sounds like, and he knows how to find it. It's the best way to help them.

"They know circuit riders don't cost them anything. Know I'm not going to ride them. I'm just going to see to it that they do it right. I'm there to help them. I don't go in and boss anybody. I don't tell them what to do—I suggest that they do this or that."

Oftentimes water operators work in isolation, with little time or prospects for connecting with others in their field. Throughout the day Holt has served them in many roles: teacher, advisor, co-worker, and, most importantly, supporter.

This last role is obvious when he describes the man at the next system. Nominated as the "Small System Operator of the Year" by the WV-RWA, Holt describes Bill Long:

"I'm proud of that boy. Not because of what I taught him as much as his *initiative*. . . . With the drought last summer they had a bad water shortage. Almost ran out. He worked day and night to keep them supplied.

"During that time he told me, 'if it doesn't rain, we've got 30 days of water left. After that 30 days, I don't know what we're gonna do.'" Ultimately, Holt says, they pulled through the drought and water shortage when Long enlisted the help of a mining company. The system was able to collect water from a local mine reservoir.

Problems With Management and Elected Officials

Long works for a community of 4,000 people. Its water plant was built in 1923, and he keeps it clean and

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The New Lead Regulations

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through pH adjustment, increasing calcium levels (to promote the formation of a protective coating on pipes and plumbing), or adding phosphate or silica-based corrosion inhibitors (which also form protective coatings).

"The nice thing about the rule," says Rizzo, "is that it's customized to a water system." What this means is that the management of a water system has the freedom *and responsibility* to choose a treatment program that will work best for their situation.

Rizzo explains further that "under these rules, the states have the option of telling a system what to do, but I don't see the states doing this. They don't want to order a treatment, and then have it not work."

A much likelier scenario will be that a system submits a carefully prepared treatment proposal, along with the data they have collected in their water quality parameter tests. The regulators will then look these over and make adjustments as needed.

Without treatment experience, how do we choose a program?

There is a possibility that state regulatory agencies will be developing guides for water system operators. These guides would help operators determine what sort of treatment technique to choose, based upon the outcomes of their water quality parameter tests (WQP) and their individual systems.

"Systems are going to have to make a management decision after they exceed the lead action level," says Rizzo. "They are going to have to ask themselves: 'do we want to trial-and-error this thing? Do we want to just get a consultant, or do we want to get help from somebody at another system whose knowledge of this will benefit us?' System operators also have to remember that they cannot violate existing MCLs [maximum contaminant levels] for other contaminants. This could happen, for example, if you adjust your pH and you end up with a THM [trihalomethane] problem."

A water system has the freedom and responsibility to choose a treatment program that will work best for their situation.

– George Rizzo, U.S. EPA Region 3

There are often simple ways to treat water for corrosiveness. In fact, for the system that has little or no other treatments going on at the same time, it can be as simple as adding something like soda ash or lime with a moderately sized chemical feed pump. None of this would be extremely labor intensive.

"The main thing I'm telling my people is to keep it as simple as possible," says a Pennsylvania treatment specialist. "There's no sense in adding a whole lot of extra equipment, labor, and cost to a process that could be done in a very simple, very straightforward way."

When must we begin treatment?

While we cannot predict how long state regulators will take to examine and approve your treatment proposal, we do know that once the state approves your plan—or specifies another one for your system—you will have two full years (24 months) to install the equipment and get treatment established.

This should give your system's management plenty of time to evaluate various options, look at costs, and consider various ways of paying for this. It should also give you some time to run the treatment and get it working smoothly before you begin submitting more WQP tests to the state.

What do we do after we start the treatment program?

The states will still monitor systems closely after corrosion control treatment has begun. Operators must collect the same water quality parameter samples for submission to the state—in the same sample locations and frequency—every six months to ensure that the treatment is working.

If the quality of your water meets the state's WQPs for a full year (two six-month monitoring periods), your system may reduce the number of tap samples required during the six-month WQP testing periods.

A system that continues to meet the state water quality limits for three consecutive years may reduce the number of tap samples and the frequency of collection to just once a year.

What's this treatment going to do to my water?

If you've never treated for corrosion control before now, you will realize that this kind of treatment program will actually benefit your system. With your water being less corrosive, the life of your distribution system should be lengthened. Most large water systems have already installed corrosion control treatment as a means of saving money in the long run. Leaks and line replacement should happen less frequently in a system whose water is non-corrosive.

Many operators wonder what the quality of the water will be in general, and here again, you will realize benefits. Water that is less corrosive is much likelier to be clean. The number of complaints you receive about dirty water should be less, as well, since there will be less flaking and rust problems.

"If you don't understand the lead and copper rule, you do understand dirty laundry complaints," says West Virginia Rural Water Association's Treatment Program Manager Larry Rader, "and there's going to be less of them when you implement this treatment."

The August edition of On Tap *will examine this regulation's provisions for source water monitoring and lead service line replacement. We'll also look at some more general aspects of this ruling, such as enforcement, liability, and costs to small water systems.* ■

Helping Water Systems Cope

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organized. Holt finds him in one of the pump houses, working on some equipment. After introductions, Long grimly states:

"I may not be here the next time you stop by, because I might get fired. Our water is running 2,000 parts per million of sodium, and the mayor wants me to use it anyway. I am not going to jeopardize the public's health just because the VFD wants the tanks full to fight fires."

Long is faced with a dilemma that many water system employees face when supervised by elected officials. Poor management may also add to the problem.

Holt points to the well heads scattered around the property. "This system had all the good water they needed with those wells, but they went to the creek for their water supply years ago, and they let these wells go. Now the plumbing is so corroded, they're worthless." Long nods.

The two of them then go in the mini lab Long has set up in his office, and Holt explains a procedure for testing—his purpose for the visit.

As Holt readies to leave, Long refers again to his predicament with the mayor and the water supply: "I don't know what's gonna happen. . . ."

"Keep me posted, Bill," Holt replies, pulling up his collar. He looks up at the clouds. "It's gonna turn cold on us. . . ."

"Let her snow," says Long. "We need the water."

For the number of your state Rural Water Association, call the National Drinking Water Clearinghouse at 1-800-624-8301. ■

Drinking Water Glossary: A List of Commonly Used Terms

Editor's note: By defining basic terms as they pertain to the Safe Drinking Water Act, we hope to ensure a better understanding between local officials, engineers, water operators, and the general public. The following terms and their definitions were derived from various U.S. Environmental Protection Agency (EPA) documents.

☛ **Public Water System**—a system that has 15 or more service connections or that regularly serves at least 25 people a day for at least 60 days each year. Public water systems are divided into two categories: *community water systems* and *noncommunity water systems.*

☛ **Community Water System**—a public water system that has at least 15 service connections for year-round residents *or* that serves at least 25 year-round residents.

☛ **Noncommunity Water System**—a public water system that does not meet the definition of a community water system. Noncommunity water systems can be either *transient noncommunity systems* or *nontransient noncommunity systems*.

☛ **Transient Noncommunity System—**these water systems typically serve travelers and others who are "passing through" or staying temporarily at locations such as highway rest stops, restaurants, and public parks. These systems serve at least 25 people a day for at least 60 days a year, but typically do not serve the same people each day.

☛ **Nontransient Noncommunity System**—in contrast to the *transient* noncommunity systems described above, *nontransient* noncommunity water systems serve the same 25 people for at least six months a year. Examples include schools, factories, and other workplaces that have their own drinking water supply.

☛ **Surface Water**—water sources found on the earth's surface, such as lakes, reservoirs, rivers, and streams.

☛ **Groundwater**—water sources found below the earth's surface.

☛ **Raw Water**—untreated surface or groundwater.

☛ **National Primary Drinking Water Regulations (NPDWRs)**—developed by the U.S. EPA, these regulations were designed to keep drinking water clean and to protect the public from waterborne disease. These regulations define either a Maximum Contaminant Level or a *treatment technique requirement* to control the presence of contaminants in drinking water.

☛ **Maximum Contaminant Level (MCL)**—the enforceable standard, or number against which your system's water samples are judged for compliance with the regulations.

☛ **Treatment Technique Requirement**—this requirement is set for contaminants that are difficult or costly to measure and is used instead of MCLs. Under this requirement, specific water treatment practices, such as filtration or corrosion control, may be required.

☛ **Maximum Contaminant Level Goal (MCLG)**—this is a number that is associated with no adverse health effects from drinking water containing a particular contaminant over a lifetime. For chemicals believed to cause cancer, for example, the MCLGs are set at zero, as there is no known safe consumption level. It is a non-enforceable, ideal health goal issued as part of the *NPDWRs. MCLs* are set as close to MCLGs as possible, considering costs and technology.

☛ **Secondary Standards**—these standards, sometimes called Secondary Maximum Contaminant Levels (SMCLs), address taste, odor, color, and other aesthetic aspects of drinking water that do not present health risks. These guidelines are recommended as reasonable goals, but federal law does not require water systems to comply with them; however, some states do choose to enforce them. ■

CALENDAR OF EVENTS

If your organization is planning a conference, workshop, exhibit, or seminar that is relevant to the people who work with small water systems, please send information about the event to NDWC Editor at the address listed in the staffbox on page 2.

EVENT	DATE & LOCATION	CONTACT
Rural Water Rally	May 4–6: Washington, D.C.	**(405) 252-0629** National Rural Water Association
Sixth National Outdoor Action Conference and Exhibition on Aquifer Restoration, Ground Water Monitoring, and Geophysical Methods	May 11–13: Las Vegas, Nevada	**(614) 761-1711** National Ground Water Association
Groundwater Education Summit	May 11–12: Chicago, Illinois	**(517) 353-9709 or (313) 665-9135** Groundwater Education in Michigan program and the Great Lakes Commission
***Corrective Action for Containing and Controlling Ground Water Contamination**	May 12–14, 1992: Durham, North Carolina	**(614) 761-1711** National Ground Water Association
Control of Wet Weather Water Quality Problems	May 31–June 3: Indianapolis, Indiana	**(703) 684-2400** Water Environment Federation
***Landfills and Ground Water Quality Protection Issues**	June 9–10: Minneapolis, Minnesota	**(614) 761-1711** National Ground Water Association
***Introduction to Ground Water Geochemistry**	June 9–11: Minneapolis, Minnesota	**(614) 761-1711** National Ground Water Association
***Fundamentals of Environmental Sampling**	June 9–12: Columbus, Ohio	**(614) 761-1711** National Ground Water Association
AWWA Annual Conference and Exposition	June 18–22: Vancouver, British Columbia, Canada	**(303) 794-7711** American Water Works Association
U.S. Conference of Mayors' Annual Meeting	June 19–24: Houston, Texas	**(202) 293-7330** U.S. Conference of Mayors
GFOA's Annual Conference	June 21–24: Orlando, Florida	**(312) 977-9700** Government Finance Officers Association
Urban and Agricultural Water Reuse Conference	June 28–July 1: Orlando, Florida	**(703) 684-2400** Water Environment Federation
NACo's 57th Annual Conference	July 8–11: Minneapolis, Minnesota	**(202) 393-6226** National Association of Counties
Networking: Together We Succeed— 1992 International Environmental Health Conference and Exhibition	July 11–15, 1992: Winnipeg, Manitoba, Canada	**(303) 756-9090** Cosponsored by the National Environmental Health Association and the Canadian Institute of Public Health Inspectors
***Theory and Practice of Ground Water Monitoring and Sampling**	July 28–30: Chicago, Illinois	**(614) 761-1711** National Ground Water Association
***Fundamentals of Ground Water Contamination Management: Investigations and Remediation**	July 29–31: Chicago, Illinois	**(614) 761-1711** National Ground Water Association

*** short course**

National Drinking Water Week

Continued from page 1

citizens about the town's water or make presentations to school children and civic groups about how saving water at home saves the family money and helps save on treatment costs at the water and wastewater treatment plants, as well.

Because water is also needed for the local fire department, get them involved too. Summer brings water shortages to many areas of the country, and water waste to many others. Educate people not to water their lawns and gardens unnecessarily, and to water in the evening when less of it is apt to evaporate. Warn against dumping motor oil and other products on the ground, where they can contaminate the groundwater. The more your area's citizens become aware about the importance of safe drinking water—and their role in keeping it safe—the more visibility and support your water system will receive.

Other organizations with which you might work include local environmental groups, your county extension agent, your state Rural Water Association, the League of Women Voters, and scouting and 4-H groups. Free or low-cost public education materials often are available from organizations that are concerned about public health and environmental issues. One such group is the National Drinking Water Week Coalition.

Composed of various organizations, including the American Water Works Association (AWWA) and its Research Foundation, the U.S. Department of Agriculture Extension Service, the American Ground Water Trust, the League of Women Voters Education Fund, the U.S. Environmental Protection Agency, and the Water Education Foundation, the National Drinking Water Week Coalition has initiated a "Blue Thumb" campaign and developed an information packet. Included in the packet are activities for students, eye-opening water facts, radio public service announcements, a sample news release, water conservation suggestions for consumers, and other educational and promotional materials.

Expanding on the idea that a "green thumb" implies caring for and nurturing plants, the Blue Thumb activities are part of a national water awareness campaign that encourages us to care for and protect the water that gives our planet life.

Expanding on the idea that a "green thumb" implies caring for and nurturing plants, the Blue Thumb activities are part of a national water awareness campaign that encourages us to care for and protect the water that gives our planet life. "We've been searching for a way to engage the public in a positive way with drinking water—not only to encourage them to be aware but to encourage them to care . . . so they will help us do our jobs, rather than work against us," said Joan Dent, AWWA director of public information.

Although the Blue Thumb campaign gets under way during National Drinking Water Week, it will continue for several years, Dent said. Blue Thumb activities, such as community meetings, water clean ups, and water treatment facility open houses, are planned around the country and in Canada.

To learn more about the Blue Thumb campaign and how your utility can get involved, call your state AWWA section or contact Dent at (303) 794-7711. ■

STEP Program Expands, Offers Handbook

The Small Towns Environment Program (STEP), which works through state governments to help small communities solve their own environmental problems, is expanding its scope.

Headquartered at The Rensselaerville Institute in Rensselaerville, New York, STEP is an outgrowth of the New York State Self-Help Support System, which has helped spur more than 90 rural New York public water or wastewater projects toward completion. Altogether, these communities saved more than $13 million through the self-help program.

Water and wastewater demonstration projects are now in the planning stages in Maryland, North Carolina, and Arkansas, said Chris Conway, senior associate with the program. "We expect all three of these projects to go into construction this spring or summer," he said.

Participating in STEP requires support on the state level and interagency cooperation, Conway said. In addition, a community must establish its environmental problems as a priority; must be willing to commit local resources, such as time, energy, and some funds; and there must be "sparkplug" residents who have the skills and desire to see the project through, he said.

A handbook has been published that gives specific guidelines and techniques for establishing self-help projects. Composed of three main parts, including self-help strategies and how to use them, the context of self-help, and various appendices, *The Self-Help Handbook* costs $19, postpaid. To order, or for more information about STEP, call (518) 797-3783. ■

Drinking Water Clearinghouse Offers Free Educational Products

Note: Free items are limited to one of each per order. If free items are not available, you will be given the opportunity to receive free photocopies.

Public Water Systems: Providing Our Nation's Drinking Water

Item #: DWBRGN03

The potential threat to public water systems and what management and the public can do to protect them are addressed in this free 1989 brochure.

WATER: The Resource That Gets Used & Used & Used for Everything

Item #: DWBLPE07

A good item for schools, this free poster has a drawing of the many sources and users of fresh water on one side; the other side has a series of charts and tables detailing water use by state, a breakdown of the earth's water supplies, and other water-related facts.

TO ORDER:

Call
1-800-624-8301
Shipping and handling charges apply.

Is Your Drinking Water Safe?

Item #: DWBLPE01

This free U.S. Environmental Protection Agency (EPA) booklet describes what the drinking water program means to citizens' health. Tables are included that list primary and secondary contaminants (as of 1989), as well as the sources of these contaminants.

Safe Drinking Water Act. 1986 Amendments

Item #: DWBLRG03

Published in 1986, this free 10-page booklet describes the roles of the U.S. EPA, the states, and local governments in implementing the amendments to the Safe Drinking Water Act.

The Lead Ban: Preventing the Use of Lead in Public Water Systems and Plumbing Used for Drinking Water

Item #: DWBRGN02

This free 1989 brochure discusses preventing the use of lead in public water systems and in plumbing. Who is affected by the ban and what the public can do are also discussed.

Lead Contamination Control Act (LCCA)

Item #: DWBRRG01

This free 1989 brochure describes the Lead Contamination Control Act, who it affects, why it was enacted, federal guidance, and state agencies involved.

Corrosion Manual for Internal Corrosion of Water Distribution Systems

Item #: DWBKDM15

Published in 1984, this free EPA manual provides information about the causes and types of corrosion and gives practical guidance to water suppliers and operators about detecting and solving corrosion-related problems. A glossary and seven case studies are included.

In the next issue . . .

- **More information is provided about the lead regulations**
- **Phase II requirements are examined**
- **EPA's Low-Cost Small System Treatment Technology Initiative is discussed**
- **We look at the 20th anniversary of the Clean Water Act**
- **NDWC's query form responses are reviewed**

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