



# WATER TAP

WASHINGTON'S DRINKING WATER NEWSLETTER

*Water, Water, Everywhere!*

## Will you be prepared?

Floods are the most common and widespread of all natural disasters, except fire, according to the Federal Emergency Management Agency. Most communities have experienced some kind of flooding following heavy rain or winter thaws. In January this year, flood conditions were reported on at least 13 rivers in nine Washington counties.

Floods pose a particular threat to drinking water systems because floodwaters often contain biological and chemical contaminants that can make consumers sick. These contaminants can end up at consumer taps if parts of the water distribution system are vulnerable to flooding.

For example, floodwater can be sucked into the water distribution system if a significant loss of pressure occurs when all or part of the service area is flooded.

### Surface water sources

Heavy rain can change the quality of surface water forcing a utility to change its treatment plant operations. This can sometimes cause taste and odor problems with the treated water. In rare circumstance, a utility may have to shut the treatment plant down and notify consumers to reduce water use, or provide other directions to ensure drinking water is safe and reliable.



The Skagit River flooded the town of Hamilton in October 2003. (Photo courtesy of Washington Emergency Management Division)

### Groundwater sources

Contaminants can enter the water supply by directly flooding the wellhead or spring collection system.

### What to do if a flood is predicted for your area

- ◆ Have a supply of coliform sample bottles on hand.
- ◆ If possible, increase or add chlorine to the water supply so you can monitor the chlorine residuals in your system. A drop in the chlorine residual can indicate that contaminated water has entered your system.

### What to do if your well is flooded

- ◆ Advise residents to boil their drinking water for three minutes to kill disease-causing bacteria and parasites until you tell them the water is safe to drink. Do this even if your water system is chlorinated because your treatment may not be effective against contaminated floodwaters.

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# THE DIRECTOR'S COLUMN

BY DENISE ADDOTTA CLIFFORD



The Office of Drinking Water is responsible for implementing the 2003 Municipal Water Supply-Efficiency Requirements Act, referred to as the Municipal Water Law.

This law generally applies to water systems that serve 15

or more residential connections and some smaller systems that supply water for municipal purposes as defined by the Legislature. It was designed to:

- Provide more certainty and flexibility for water rights held by water systems.
- More closely tie the Department of Health's water system planning and engineering approvals to water rights administered by the state Department of Ecology.
- Improve communities' ability to plan for future growth.
- Offer greater flexibility to solve public health problems with water right changes and transfers.
- Advance water use efficiency.
- Assure greater reliability of safe drinking water for communities.

Implementing the law is an awesome task that has consumed much of our time in recent months, as well as countless hours on the part of water systems and others who have been working with us to carry out the elements of the law. Efforts to date include:

## Development of a water use efficiency rule

A stakeholder advisory committee met monthly during the past year to advise us on developing water use efficiency regulations. The committee included a cross-section of water utilities, environmental groups, tribal governments, business interests, local governments, the Department of Ecology, the Utilities and Transportation Commission and utility customers. The committee report was completed in February. We expect to have a draft rule out for public review in May and the final rule in place by this December.

## Local government consistency

The law directs us to ensure water system plans are consistent with plans adopted at the local level (Growth Management Act requirements, land use regulations and watershed plans). Key issues include funding for local governments to conduct consistency reviews, the scope of consistency reviews and conditions under which we would delay plan approval. We expect to begin a rulemaking process on these issues later this year.

## "Duty to serve"

The law requires each municipal water supplier to provide "retail water service within its retail service area." We are working with our Water Supply Advisory Committee to clarify our position on the duty to serve provisions and will be seeking more input. Key issues include how to define providing service in a "timely and reasonable manner," whether the duty to serve provision includes remote service, how service disputes will be resolved, and the relationship of this law to the Public Water System Coordination Act. We will include these issues in the rule-making process we start later this year.

## Coordination with Ecology and other state agencies

We've been working closely with the Department of Ecology on implementing this law. Key areas include linkages between utility planning and water rights and watershed planning issues. We are also coordinating with the departments of Fish and Wildlife and Community, Trade and Economic Development on links to watershed planning.

We will continue to keep you up to speed on these issues as we work through them and clarify areas of the law where we have some confusion. Meanwhile, if you want more information or an opportunity to comment, visit our Web site at [www.doh.wa.gov/ehp/dw/municipal\\_water/municipal\\_water\\_law.htm](http://www.doh.wa.gov/ehp/dw/municipal_water/municipal_water_law.htm)

## Water, Water, Everywhere - (Continued from Page 1)

- ◆ Collect coliform samples at your well and throughout the distribution system as soon as you are able to safely gain access.
- ◆ Contact the Office of Drinking Water (ODW) anytime you have advised customers to boil their water, or when the results of water testing show the presence of coliform bacteria.

### What to do if your distribution system is flooded

- ◆ Monitor chlorine residuals and system pressure as soon as you are able to safely gain access to the system.
- ◆ If the system loses pressure at any time while the area is flooded, advise customers to boil water until you tell them the water is safe to drink. Collect coliform samples throughout the flooded area and let your users know the results.
- ◆ If you are monitoring chlorine levels and notice a drop in the residual while the area is flooded, advise customers to boil their water until you tell them the water is safe to drink. Collect coliform samples throughout the flooded area and let your users know the results.
- ◆ Even if you think your system was not affected by the flood, plan to collect some extra coliform samples.
- ◆ Contact ODW anytime you have advised customers to boil their water or when the results of water testing show the presence of coliform bacteria.

### What to tell your customers

- ◆ Customers affected by flooding may be frightened. Their perception of risk may be high and they need timely and accurate information about the quality of their drinking water.
- ◆ Not all customers experience the same flooding conditions. Some may feel a direct threat from flood waters, others may not. It's important to know your water quality and communicate to all customers.
- ◆ Remember to be safe, not sorry! Make sure your customers have the information they need to make good decisions about their drinking water.

### Where to go for help

Visit ODW's Web site at [http://www.doh.wa.gov/ehp/dw/our\\_main\\_pages/dwflood.htm](http://www.doh.wa.gov/ehp/dw/our_main_pages/dwflood.htm) or call the nearest regional office:

**Eastern Region** – (509) 456-3115

**Northwest Region** – (253) 395-6750

**Southwest Region** – (360) 664-0768

**After hours and weekends** – (877) 481-4901

You can also call your local health or emergency management agency. Contact information is online at <http://www.access.wa.gov/government/index.aspx>

## Drinking Water State Revolving Fund

### Applications due May 9

The Drinking Water State Revolving Fund is a low-interest loan program for reimbursement of capital construction projects intended to improve drinking water systems and protect public health.

Both municipal and privately owned Group A water systems may be eligible for loans. The basic interest rate is 1.5 percent. Applicants with water systems in economically distressed counties and disadvantaged communities may receive even lower interest rates. Funding will be available in spring 2006 for projects that make the final funding list.

The 2005 program guidelines and application form are online at [http://www.doh.wa.gov/ehp/dw/our\\_main\\_pages/dwsrf.htm](http://www.doh.wa.gov/ehp/dw/our_main_pages/dwsrf.htm)

For more information, please call Chris Gagnon at (360) 236-3095 or e-mail [chris.gagnon@doh.wa.gov](mailto:chris.gagnon@doh.wa.gov)

### Infrastructure Assistance Coordinating Council

The Infrastructure Assistance Coordinating Council (IACC) helps Washington communities identify and obtain the resources they need to develop, improve and maintain public works programs. Locate infrastructure funding and technical assistance on the Web at <http://www.infracfunding.wa.gov/>

### Learn first hand at the IACC fall conference - Nov. 7-10, 2005

For information, call Bill Cole, Public Works Board, at (360) 586-4125 or e-mail [bill.cole@pwb.wa.gov](mailto:bill.cole@pwb.wa.gov)



## Walkerton, Ontario

# Water managers sentenced to jail and house arrest



In December, CBC Online News reported that Stan and Frank Koebel received sentences for their role in the May 2000 E. coli outbreak that killed seven people and made another 2,500 ill.

The outbreak occurred when heavy rain contaminated Walkerton's drinking water.

According to news reports, the Koebels did not perform their legal duties when residents complained about vomiting and diarrhea.

The court said the Koebels committed a common nuisance by operating a well without a chlorinator; failing to properly monitor, sample and test well water supplied to the town; and failing to accurately record required information in the logs.

Stan, who was utilities manager, got one year in jail. His brother Frank, who was water foreman, got a nine-month conditional house arrest.

Stan received a greater sentence because the judge held him responsible for delaying a boil water notice. Although both brothers were aware of unsafe levels of E. coli in the water, the judge found that Stan lied to government officials about it for two days.

A government inquiry found that illnesses could have been avoided if Stan had monitored chlorine levels in the drinking water. It also identified deregulation of water testing and cuts to the Environment Ministry by the Ontario government as contributing factors.

A 2001 report concluded the Walkerton outbreak cost at least \$64.5 million.

- Water system repairs exceeded \$9 million
- Ontario spent \$3.5 million on legal fees and \$1.5 million supplying clean water to institutions
- Each household spent an average of \$4,000 as a result of the contamination, for a total of nearly \$7 million
- Real estate values fell a total of \$1.1 million
- Businesses spent about \$650,000 on bottled water, or disinfecting and replacing equipment

Extensive information, including court documents and photos, is on the CBC News Web site at <http://www.cbc.ca/news/background/walkerton/index.html>

### Rule Making Activities

## Water Works Operator Certification Rule

Revisions to the Operator Certification Rule (WAC 246-292) strengthen the Office of Drinking Water's (ODW) ability to enforce drinking water regulations. The revisions clarify operator duties, training acceptable to meet professional growth requirements, and ODW's ability to revoke or suspend an operator's water works certificate. The revisions go into effect in April.

### Drinking Water Operating Permits – Surcharge

This month, ODW plans to hold a public hearing on a proposal to incorporate a surcharge of 25 cents per residential connection as authorized by the Municipal Water Law. ODW is developing a threshold to exclude small water systems from the surcharge because it would not bring in enough revenue to warrant charging the fee.

### Water Use Efficiency Rule

Based on Municipal Water Law requirements, ODW is developing water use efficiency regulations. Over the last year, ODW has worked with a statewide advisory committee to get recommendations on what should be in the rule. The advisory committee report will serve as the basis for soliciting comments from ODW staff for developing the draft rule. ODW will gather public comments on the rule beginning in May. We expect to have the rule in place by December.

For more information on these rule making activities, call Theresa Phillips, Rules Coordinator, at (360) 236-3147 or e-mail [theresa.phillips@doh.wa.gov](mailto:theresa.phillips@doh.wa.gov)



# Especially for Small Systems

## **Sanitary Surveys** **A proven way to find and eliminate high public health risks**

If a sanitary survey is scheduled for your water system, you may wonder what the surveyor is looking for, and what will happen if they find a problem.

Surveyors look for deficiencies that may pose a threat to public health. In particular, they must identify any existing high public health risk (HPHR) and, if possible, recommend ways to correct the problem. An HPHR is any situation that is an imminent threat to public health.

Surveyors base their search on professional judgment and a Small Water System Sanitary Survey Checklist. The checklist focuses on the most common deficiencies found during a survey, and includes minor as well as major threats to public health.

### **High public health risks**

ODW established criteria defining HPHRs to help surveyors identify potential high risks, but the criteria serve other purposes, too. They provide a consistent manner for evaluating water systems. They ensure operators receive sufficient and timely notice of deficiencies and

guidance on the appropriate actions needed to correct them. And, they give ODW a method to track and confirm that high public health risks are eliminated.

The criteria used to determine HPHR deficiencies include:

- A susceptible water source with a high risk threat within the sanitary control area.
- Inoperable treatment facilities, when ODW required treatment for a primary acute contaminant.
- A newly discovered unfiltered surface water or unapproved groundwater source is in use, which has no water quality history and is not listed on the Water Facility Inventory form.
- Confirmed backflow or back-siphon incidents.
- Documented cases of operation or reporting fraud, or willful neglect by the operator.
- Other problems based on professional judgment.

The threats most commonly found during sanitary surveys fall under the last bullet. Most of these HPHRs result from a poorly constructed wellhead or reservoir, where a hole or crack allows bacteria to enter the water system. For example, rodents can contaminate the water through openings in the wellhead, and birds can contaminate the water through openings in the tops of reservoirs.

This is not to say that only water systems with older facilities must be concerned. Mishaps can happen because of vandalism, poor maintenance, components that are exposed to the weather, equipment failures, and so on.

### **For more information**

ODW has developed a booklet to help you prepare for your sanitary survey and three tech tips covering simple ways to correct the most common problems found at wellheads and reservoirs:

**Preparing for a Sanitary Survey: Information to Help Small Water Systems** (Booklet, 32 pages DOH PUB 331-238)

**Simple Fixes for Wellhead Openings** (Tech tips, 2 pages DOH PUB 331-232)

**Sanitary Protection of Reservoirs – Hatches** (Tech tips, 2 pages DOH PUB 331-249)

**Sanitary Protection of Reservoirs – Vents** (Tech tips, 2 pages DOH PUB 331-250)

You can find all four publications online at <http://www4.doh.wa.gov/dw/publications/> or get copies by calling (800) 521-0323.

## When things go wrong

# Public notification tips for surface water systems

Even a well-operated surface water treatment plant can have a treatment failure due to weather, equipment malfunction or human error. When this occurs, you need to open the lines of communication with the Department of Health (DOH) and your customers.

The Safe Drinking Water Act requires water systems to consult with DOH and keep their consumers informed. So, when things go wrong at your treatment plant, communicate early and often.

Here are some guidelines for meeting the requirements of the law.

### Consulting with DOH

In the following circumstances, you must contact DOH as soon as possible but no later than 24 hours after you learn of the problem.

#### All surface water systems

- A waterborne disease outbreak occurs that may be attributed to the water system.
- The residual disinfection concentration falls below 0.2 mg/L at the entry to the distribution system.

#### Filtered surface water systems

- The turbidity of your plant effluent exceeds the maximum limit for your type of filtration.
- An event occurs that may affect the ability of your water treatment facility to produce safe water. This could include a spill in the watershed or a process failure in the treatment plant.

#### Unfiltered surface water systems

- Your delivered water exceeds the 5.0 NTU maximum turbidity limit.
- The minimum level of disinfection is not met.
- Your source is taken off-line due to an emergency.

### Notifying the public

The U.S. Environmental Protection Agency puts drinking water violations into three categories, or tiers. Each tier represents a different level of public health risk, with specific requirements for consulting with DOH and notifying your customers.

#### Tier 1 violations represent the highest level of risk to the public

You must immediately consult with DOH and notify your customers as soon as practical, but no more than 24 hours after you learn of the problem. In most cases, customers are advised to boil their water or seek an alternate source of drinking water. The advisory must be hand delivered,

broadcast on radio or TV. In some cases, with DOH approval, the advisory may be posted in a public place.

#### Tier 1 surface water treatment violations are:

- A waterborne disease outbreak or other waterborne emergency.
- Exceeding the maximum turbidity limit, if DOH staff determines there is an immediate risk to public health. If you exceed maximum turbidity limit and do not consult with DOH within 24 hours, it automatically becomes a tier 1 violation.
- Exceeding the maximum chlorine dioxide residual disinfectant level.
- Any other violation or situation DOH staff determines to be an immediate risk to public health.

#### Tier 2 violations represent a lower level of risk

You must notify your customers within 30 days. If you operate a community water system, you must

#### What is the maximum turbidity limit for my system?

Your turbidity limit depends on the type of filtration you use. Slow sand, bag, cartridge and diatomaceous earth (DE) filtration plants may never exceed 5.0 NTU. Rapid sand filtration plants may never exceed 1.0 NTU. The limit for membrane filtration and other alternate technologies depends on the specific treatment unit you have installed. Call your DOH regional office for information.

#### What's an NTU?

Nephelometric turbidity unit (NTU) is a measure of the cloudiness, or turbidity, of water. NTU is an important monitoring parameter for systems operating surface water treatment plants.

#### I have a tier 2 violation. What should my public notice say?

Each notice must contain specific information. Call DOH for a sample notice that fits your situation. The complete list of requirements is in Part 7 of the Drinking Water Regulations (WAC 246-290).

hand deliver or mail the notice. If you operate a non-community system, such as a school, camp or park, you must mail the notice, hand deliver it or post it in a location suitable for water users. In either case, DOH may approve alternate delivery methods needed to reach all of your customers.

### ***Tier 2 surface water treatment violations are:***

- Exceeding the monthly turbidity limit (sometimes called the 95 percent limit).
- Failing to provide adequate disinfection at the plant, at the entry to the distribution system, or within the distribution system.
- Exceeding the maximum turbidity limit, if you consulted with DOH staff and they determined there was not an immediate risk to public health.

### **Tier 3 violations represent the lowest level of public health risk.**

You must notify your customers within one year of the violation. If you operate a community system, you may use your annual consumer confidence report to deliver the notice.

### ***Tier 3 surface water treatment violations are:***

- Any monitoring violation.
- Failure to follow an established testing procedure.

### **For more information**

DOH staff is available to help you whenever you have questions or problems.

**Eastern Region** – (509) 456-3115

**Northwest Region** – (253) 395-6750

**Southwest Region** – (360) 664-0768

**After hours and weekends** –  
(877) 481-4901

## **Online Access to Professional Growth Records Now Available**

Certified water works operators in Washington may now view their professional growth training records online at [www.wetrc.org](http://www.wetrc.org)

The Washington Environmental Training Center (WETRC) at Green River Community College created the Web site to help water works operators keep track of their professional growth requirement. This is an important service because the Office of Drinking Water (ODW) requires certified water works operators to meet the requirement during each professional growth reporting period to be eligible to renew their certificates.

### **How do I access my professional growth report?**

Go to the Web site and click “Water Works Operators” in the left column.

### **Is my professional growth report confidential?**

Yes. It is password protected. Just follow the simple instructions provided to log in with a password that includes your water works certification number.

### **What will be on my professional growth report?**

You will find a list of the training you have completed during your current professional growth reporting period and other important information including:

- The start and end dates of your current professional growth reporting period.
- The total continuing education units you’ve earned this reporting period.
- The date you completed your requirement for this reporting period.
- A list of training you completed in the last two reporting periods.

### **How long will it take for courses to be listed?**

ODW encourages course sponsors to submit participant rosters to WETRC within 30 days after approved training is completed. Therefore, please allow at least 30 days for approved training to appear on your professional growth report.

### **Will the Web site allow me to print my professional growth report?**

Yes, but it is an “unofficial” report, not an official transcript. WETRC will continue to mail a completion letter and official transcript to certified water works operators when they meet their professional growth requirement.

You can also request an official transcript by calling WETRC at (253) 288-3369 or (800) 562-0858.



# New information available for 2004 Consumer Confidence Reports



Soon it will be time to prepare and distribute your annual Consumer Confidence Report (CCR) summarizing calendar year 2004. The Office of Drinking Water (ODW) will send packets of information in April to help you complete your CCR.

All Group A community water systems must provide a report

about the quality of water being served by their systems to their customers and ODW no later than July 1. Systems must also submit to ODW a certificate confirming they distributed the CCR to customers and the information in it was correct.

The CCR summarizes the results of water quality monitoring conducted last year. It provides key information to customers about the source and quality of the community's drinking water, and the potential health effects of contaminants that may be in it. This information allows customers to make important personal health decisions.

## *New information to include in your CCR*

This year ODW is making information collected through the source water assessment program (SWAP) available to water systems online at <http://www4.doh.wa.gov/dw/swap/app/login.cfm?app=maps>. A modified version of the Web site will be available to the public later this year.

SWAP is a federally mandated effort to:

1. Identify the location of current and future drinking water supplies.
2. Evaluate how easily those source waters can be contaminated.
3. Inventory potential sources of contamination that might threaten drinking water quality.
4. Inform interested people about the assessment results.

ODW used existing wellhead protection and watershed control program data to identify locations of current and future water supplies, and monitoring waiver susceptibility assessments to estimate source water susceptibility. Staff also worked with local governments, other state agencies, and the U.S. Environmental Protection Agency to build a geographic information system (GIS).

If you find errors on the SWAP Web site, please use the online order form to report corrections. If you have problems or need more information about SWAP, call ODW's IT help desk at (360) 236-3113 or e-mail [dwhelp@doh.wa.gov](mailto:dwhelp@doh.wa.gov)

## *Help preparing your CCR*

Visit the ODW Web site at <http://www.doh.wa.gov/ehp/dw/> and click on Consumer Confidence Reports. Or, call the nearest ODW regional office:

**Eastern Region** – (509) 456-3115

**Northwest Region** – (253) 395-6750

**Southwest Region** – (360) 664-0768

**Evergreen Rural Water of Washington** has a free online computer template to guide you through the report at <http://www.erwow.org/consumerconfidence.htm>. You can also order a CD-ROM at \$20 for members and \$30 for nonmembers by calling (800) 272-5981 or writing to PO Box 2300, Shelton, WA 98584.

**U.S. Environmental Protection Agency** has a free online computer template to guide you through your CCR at <http://www.epa.gov/safewater/ccr1.html>. For more information, call (800) 426-4791 or write to 1200 Pennsylvania Avenue N.W., Washington, DC 20460.

**American Water Works Association** has a variety of resources online at <http://www.awwa.org>. For more information, call (800) 366-0107, fax (303) 794-3951, or write to 6666 W. Quincy Ave., Denver, CO 80235.

# Filter Backwash

## Tips for surface water sources with rapid rate filtration



Rapid rate filter at Longview being backwashed following an inspection.

Filter backwash is integral to the operation of a rapid rate filter. Properly operated backwash processes can significantly reduce the risk that disease-causing organisms will enter the water distribution system.

During normal operations, a clean filter accumulates and stores contaminants it captures from the water primarily by attachment or adhesion that occurs when particles stick to the surface of filter grains or previously deposited material.

As this process continues, the open spaces between the grains of the filter gradually fill in and there is an increased resistance to flow, which is measured as filter headloss. Eventually, if filters are not backwashed, filter breakthrough occurs – sending contaminants into the water distribution system.

Filters should be backwashed before breakthrough occurs to avoid unnecessary health risk to your customers.

The purpose of backwashing is to clean the filters. This prevents filter breakthrough and prepares the filter media physically and chemically to begin filtering again.

Efficient backwashing removes the captured particles from the filter without losing the anthracite or sand media. In actual practice, it is normal to lose up to an inch of media per year during backwashing. If backwash rates are too high, significantly more media could vanish, and filter performance can be compromised. In either case, it is important to replace any missing media during your annual filter inspection and maintenance check!

Generally, the most effective backwashing results when there is adequate expansion of the filter bed. This is caused by an

upward flow of water fluidizing the media bed, increasing the space between the media grains and causing the media to occupy more volume. Fluidization promotes collisions of the media grains, which scours away surface deposits.

If the filter is not adequately cleaned during backwashes, successive runs may result in a build-up of dirt and coagulant deposits, leading to problems such as mud-ball formation and development of cracks or fissures in the media. Filter cracking, in turn, promotes short-circuiting through the filter, and reduces the effectiveness of the filtration barrier.

Effective backwashing depends on achieving a balance in factors. What works at one facility may not be optimal for another. With the following guidelines in mind, you can modify your standard backwashing procedure to help you produce the safest water you can for your community.

### Guidelines for filter backwashing

**Bed expansion.** In most cases, the optimal backwash flow rate will result in at least a 20 percent expansion of the filter bed. For example, if your filter has 32-inches of combined anthracite or sand media, the expanded depth of the media should be at least 38-inches. Information on an effective low-cost tool that can be made for monitoring bed expansion is on the Pennsylvania Department of Environmental Protection's Web site at [http://www.dep.state.pa.us/dep/deputate/watermgt/WSM/WSM\\_DWM/FPPE/Filter\\_Bed\\_Expansion.pdf](http://www.dep.state.pa.us/dep/deputate/watermgt/WSM/WSM_DWM/FPPE/Filter_Bed_Expansion.pdf)

**Determining optimal backwash flow rate.** The key factors effecting expansion of the

filter bed are backwash flow rate and the thickness, or viscosity, of the water. For a given flow rate, colder water will result in greater expansion of the filter bed because it is more viscous than warmer water. Since water viscosity varies significantly with the normal range of seasonal temperatures encountered at many water treatment plants, backwash flow rates should be adjusted as temperatures change throughout the year to ensure correct bed expansion.

When temperatures go up, backwash flow rates need to go up, too. And, when temperatures go down, flow rates need to go down. For more information on this topic, visit the Ohio State Environmental Protection Agency's Web site at <http://www.epa.state.oh.us/ddagw/Documents/OAWWA%20Filter%20Assessment%20Articles.pdf>

**Auxiliary scouring.** Air scour and hydraulic surface washers significantly improve backwashing performance. If you are having problems with mudball formation, these tools offer a good potential solution, and should be evaluated.

**How clean is clean enough?** Overwashing, which is backwashing for an extended period, actually increases the time the filter needs to ripen when returning to service. One way to determine when to terminate backwashing is to look at the turbidity of the waste washwater. 10 NTU is a generally accepted value for termination of backwashing. After backwashing, filtered water should be sent to waste until the turbidity drops below 0.1 NTU.

# Some water systems may qualify for reduced disinfection byproduct monitoring

Most community and non-transient non-community water systems that continuously chlorinate or ozonate their water began disinfection byproduct (DBP) monitoring in 2004.

The number of samples they are required to take each year depends upon the following:

- Type of sources used, such as surface water, groundwater, or groundwater under the direct influence of surface water (GWI)
- Population served
- Number of treatment plants used

Under specific conditions, water systems may qualify for reduced total trihalomethane (TTHM) and haloacetic acid (HAA5) monitoring.

Laboratories typically report values for TTHM and HAA5 samples in micrograms per liter ( $\mu\text{g}/\text{L}$ ) or parts per billion (ppb). But, they also may use milligrams per liter ( $\text{mg}/\text{L}$ ) or parts per million (ppm). So, please carefully check units reported:  $40 \mu\text{g}/\text{L}$  or ppb equals  $0.040 \text{mg}/\text{L}$  or ppm.

## To qualify for reduced monitoring

- You first must have taken the correct number of samples in 2004.
- TTHM and HAA5 samples must be on the same monitoring schedule.
- Both TTHM and HAA5 sample results must meet the following applicable criteria.

## Groundwater systems serving fewer than 10,000 people

Samples must have been taken during the month of warmest water temperature. The annual average of all TTHM samples must be  $20 \mu\text{g}/\text{L}$  or less, and the HAA5 annual average must be  $15 \mu\text{g}/\text{L}$  or less to qualify after one year.

If annual averages meet both of these levels, a system may reduce monitoring to one TTHM and one HAA5 per treatment plant every three years during the month of warmest water temperature. A system required to take only one sample for each DBP group qualifies for reduced monitoring if sample results for each group meet the criteria. The next samples would be due in 2007.



Eric Johnson, a water quality specialist for Tacoma Water, gathers samples for disinfectant monitoring.

If a system does not qualify for reduced monitoring based upon 2004 sample results, it still may qualify after two years of monitoring. A system will qualify if the TTHM annual average is  $40 \mu\text{g}/\text{L}$  or less, and the HAA5 annual average is  $30 \mu\text{g}/\text{L}$  or less for 2004 and 2005 (two consecutive years).

## Groundwater systems serving at least 10,000 people

The annual average of all TTHM samples must be  $40 \mu\text{g}/\text{L}$  or less and the HAA5 annual average must be  $30 \mu\text{g}/\text{L}$  or less. The annual average is calculated by first finding the average of all samples for each byproduct group each quarter, then adding the four consecutive quarterly averages together, and finally dividing the sum by four.

If annual averages meet both of these TTHM and HAA5 levels, a system may reduce monitoring to one TTHM and one HAA5 per treatment plant per year during the month of warmest water temperature.

## Surface water and GWI systems serving fewer than 500 people

There are no provisions for a reduced monitoring schedule for TTHM and HAA5 for surface water and GWI systems serving fewer than 500 people. Continue to take one TTHM and one HAA5 per treatment plant per year during the month of warmest water temperature.

## Surface water and GWI systems serving 500 to 9,999 people

The annual average of all TTHM samples must be  $40 \mu\text{g}/\text{L}$  or less and the HAA5 annual average must be  $30 \mu\text{g}/\text{L}$  or less. In addition, the source water annual average Total Organic

Carbon (TOC) level must be 4.0 mg/L or less. The TOC annual average is based on results of monthly samples taken from the surface water or GWI source before treatment.

If annual averages meet all three required levels, a system may reduce monitoring to one TTHM and one HAA5 per treatment plant per year during the month of warmest water temperature. TOC monitoring must continue and average levels must meet required limits to remain on a reduced schedule.

### Surface water and GWI systems serving at least 10,000 people

The running annual average of all TTHM samples must be 40 µg/L or less, and the HAA5 running annual average must be 30 µg/L or less. In addition, the source water annual average TOC level must be 4.0 mg/L or less. The running annual average is the average of four consecutive quarterly averages. The TOC annual average is based on results of monthly samples taken from the surface water or GWI source before treatment.

If annual averages meet all three required levels, a system may reduce monitoring to one TTHM and one HAA5 per treatment plant per quarter at a distribution system location reflecting maximum residence time. TOC monitoring must continue and average levels must meet required limits to remain on a reduced schedule.

### Systems not meeting criteria

Any system that did not take the required number of samples, or whose results did not meet the criteria, must remain on a routine monitoring schedule for 2005. This is the same monitoring schedule used in 2004 and identified in the system's monitoring plan.

If a system did not take the required number of samples, it incurs a monitoring violation and must complete public notification requirements within 12 months of the violation. Community systems may include this public notification in their annual consumer confidence report if it is distributed within the 12-month time frame, the notice contained in the report follows the appropriate (Tier 3) public notice content requirements, and the report is distributed following the public notification delivery requirements.

### For more information

Call the nearest Office of Drinking Water disinfection byproduct specialist:

**Eastern Region** – Mike Wilson (509) 456-3186

**Northwest Region** – Jolyn Leslie (253) 395-6762

**Southwest Region** – Jim McCauley (360) 664-8734

Visit the U.S. Environmental Protection Agency's Web site at <http://www.epa.gov/safewater/mdbp/dbpfr.html>

## Regional cross-connection control groups – resource for public water systems

Public water systems in Washington benefit from three organizations dedicated to promoting and improving the practice of cross-connection control (CCC). Office of Drinking Water (ODW) CCC staff members participate in these organizations, give presentations at meetings and seek technical input and regional perspectives from members on a variety of CCC issues.

Water system owners, operators and managers, cross-connection control specialists, backflow assembly testers, and others interested in CCC issues are encouraged to join one or more of these organizations.

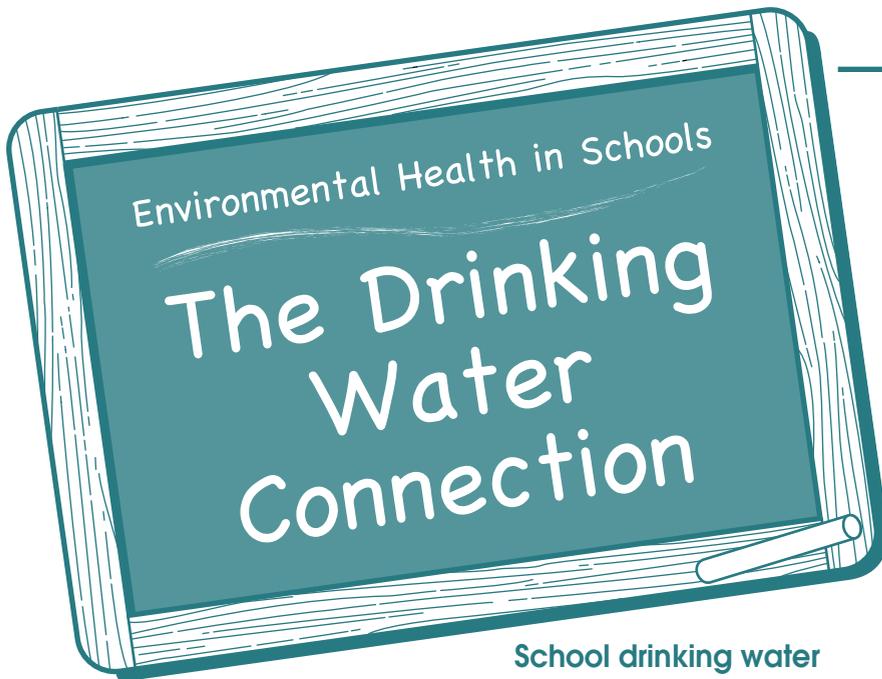
In Washington, two regional groups give CCC professionals an opportunity to network, exchange ideas and learn. Both have low annual membership fees and excellent benefits including:

- Monthly educational meetings on topics such as how to address high-hazard premises, fire protection system issues, irrigation system issues, coordination with local administrative authorities, backflow incident response, new equipment and technology, and backflow assembly tester (BAT) issues. Monthly newsletters capture meeting highlights.
- Opportunities for more experienced CCC practitioners to mentor those new to the field.
- Annual all-day seminars on a wide variety of CCC and BAT-related topics where certified water system professionals may earn continuing education units (CEUs).

The two regional groups co-publish the Northwest Journal, an informative newsletter containing news, announcements and articles of interest to CCC professionals throughout the Pacific Northwest, and host Annual Summary Report training sessions conducted by ODW CCC staff.

The **Western Washington Cross-Connection Prevention Professionals Group**, known simply as "The Group," meets on the third Wednesday of every month and holds its annual seminar in October. Dues are \$10 per year. Additional information is online at <http://www.backflowgroup.org>

(Continued on Page 15)



Every day children, teachers and other staff members interact with the environment in and around school facilities and may be affected by air quality, ventilation, temperature control, lighting, water, food and other safety issues.

However, children, particularly younger children, are more susceptible to environmental hazards than adults. Their smaller bodies mean the proportion of potential contaminants in air, food or water to body weight is much greater in children than it is for adults in the same setting.

The State Board of Health established the Primary and Secondary School Regulations for environmental health and safety at schools. Several agencies share the responsibility for ensuring that schools are safe, including the State Board of Education, the Office of the Superintendent of Public Instruction, local school boards, school district superintendents and local health jurisdictions.

### School drinking water

The Office of Drinking Water implements a comprehensive set of state and federal regulations to ensure public water systems deliver safe and reliable drinking water to their customers. This includes schools that operate their own water systems.

Last year, concerns were raised after high levels of lead were found in water fixtures in some Seattle schools. Fortunately, there appears to be no significant problems with elevated lead levels in Washington children.

Still, health officials are concerned about the potential for health effects from lead contamination, especially in young children. A 2004 governor's initiative is making \$750,000 available to help public elementary schools across the state conduct special purpose monitoring for lead. ODW is working closely with the Office of the Superintendent of Public Instruction to provide these 75 percent matching grants to schools.

Nationally, the U.S. Environmental Protection Agency estimates about 20 percent of overall exposure to lead is associated with drinking water. The primary source of exposure is lead-

base paint, but contaminated soils also may be a source.

Lead presents the greatest risk to children 6-years-old or younger because their brains and central nervous systems are still developing. They are also more likely to ingest lead by putting their hands and other objects into their mouths.

### Revising the minimum environmental standards for schools

The **Primary and Secondary School Regulations** establish minimum environmental standards for Washington schools. The last major revision of the rule was in 1971, followed by a minor revision in 1991.

After gathering extensive public testimony from various constituents on indoor air quality, drinking water and safety issues at schools in 2003, the state Department of Health (DOH) and the State Board of Health:

- Found the rule is no longer adequate to meet present-day health and safety needs in schools.
- Created a citizens committee to assist with rule revisions. Members of the School Rule Development Committee (SRDC) are community members and representatives of school associations and local health jurisdictions.

Within DOH, the Office of Drinking Water and the Office of Environmental Health and Safety are providing technical expertise and resources to support the rule revision process, which is designed to:

- Proactively protect children's health.

- Reflect the best available science.
- Ensure accountability between school districts, local health jurisdictions and their communities.
- Support and promote school health and safety programs that work.
- Have the least burdensome regulatory structure.
- Be compatible and consistent with existing related regulations, such as building codes.
- Work within the limited resources of schools and local health jurisdictions.

As part of the SRDC work, ODW is facilitating the drinking water workgroup, which includes school officials, concerned parents, clinicians, local health jurisdictions, a utility, and other interested parties. The workgroup is developing recommendations on drinking water standards, testing frequencies, reporting and notification requirements, and remediation options for the SRDC.

### For more information

**Office of Drinking Water –**  
Meliss Maxfield (360) 236-3178  
meliss.maxfield@doh.wa.gov

**Office of Environmental Health and Safety –** Nancy Bernard  
(360) 236-3072  
nancy.bernard@doh.wa.gov

The **Primary and Secondary School Regulations** (WAC 246-366) are on the Code Reviser’s Web site at <http://www.leg.wa.gov/WAC/index.cfm?fuseaction=chapterdigest&chapter=246-366>

# Eye on Island County



*Dale Tyler is a founding member and current president of the Camano Water System Association (CWSA), which began in 1989 as a small but dedicated group of water purveyors on Camano Island.*

CWSA has grown into a resource for local systems offering quarterly meetings, numerous seminars, special speakers, and a storehouse of equipment; developing educational materials; providing group insurance discounts; and encouraging education and communication among water system owners, operators and managers.

### Water Tap (WT): Why was CWSA created?

Dale Tyler (DT): When you think of it, where does one go to “kick the tires” on drinking water? Our founders realized that water systems need help and a forum where they can be heard and get good information on the operation and regulation of water systems.

### WT: How did you get started?

DT: This group grew when Island County Health Department and Lost Lake Community asked Snohomish PUD to take over the water systems on Camano Island. This gave us an issue and a forum for the opposition.

### WT: What do you consider your greatest success?

DT: Over the years CWSA gained the respect of local, state and federal drinking water authorities. The U.S. Environmental Protection Agency selected us to be a Small Entity Representative (SER) in the Lead/Copper, Radon and Arsenic Rules. We provided dialog along with 38 other SERs via hours of teleconferencing and written comment.

This early success and the controversy surrounding it gave CWSA a boost. We’re still educating the public about their drinking water and how to protect it.

### WT: Where would you like to see CWSA in 10 years?

DT: CWSA could be the catalyst to developing water rights off island; we have initiated such intent with the Department of Ecology. We also see the need for a unified water system to serve the many communities around the island.

### WT: Do you have advice for others wanting to start a similar association?

DT: Organize along watershed boundaries rather than limited government boundaries.

Start with a handful of like-minded water system owners, operators or managers and build. Give each water system one vote, regardless of size. CWSA is mainly an owners’ association, but we offer non-voting memberships to exempt well owners, engineers, well drillers, suppliers and individuals.

Issue a bi-monthly newsletter and hold quarterly meetings. Make the newsletter pay for itself by selling ads. Hold a coffee reception before meetings so members can do business and get acquainted. Offer programs and scholarships at schools. It’s rewarding, you’ll become a pillar of the community!

*(Continued on Page 15)*

## State and local partnerships

# Reducing arsenic contamination in Clark County wells

Levels of arsenic as high as 200 times the federal standard of 10 parts per billion (ppb) for Group A systems were discovered last June in wells providing drinking water to connections in northeastern Clark County.

The problem surfaced when a citizen contacted Clark County Health Department (CCHD) with concerns about elevated levels of arsenic in drinking water. During a property transfer, the citizen found arsenic levels of 900 ppb in well water. The well provides source water to a 28-year-old previously unapproved Group B water system serving four connections.

CCHD staff first ordered the test repeated – only to get an even higher reading of 1,150 ppb – and then contacted the Office of Drinking Water (ODW) for assistance. This initiated steps that ultimately brought four agencies together to fix the problem.

## Defining the scope of the problem

A key step in solving this issue is identifying the affected area and surveying the residents to determine the number of potential households interested in paying to reduce or eliminate the arsenic.

ODW staff worked with epidemiologists from Department of Health's Office of Environmental Health Assessments (OEHA) to devise a response and investigation plan. They issued a health advisory to the Group B water system, and met with concerned residents to discuss health precautions and treatment options.

CCHD initiated a screening program to test additional wells in the area. As their work progressed, the area of concern expanded. It includes the area in Clark County just south of Woodland, and may include parts of Cowlitz County, along the Lewis River. Levels of arsenic in

individual wells range from less than 10 ppb to more than 2,000 ppb.

## Finding solutions

As the scope of the problem area increased, more public meetings were held to ensure all people in the area had an opportunity to learn about the problem and alternative sources of drinking water.

ODW asked the larger utilities in the area – the City of Woodland and Clark Public Utilities (CPU) – if they were willing and able to extend water service to the affected area. Woodland is the closest utility, but the contaminated wells are in CPU's future service area.

CPU conducted a feasibility study in late 2004 to evaluate the costs of alternatives to provide clean water to the affected area. ODW paid for the study with a restructuring grant.

CPU reported the preliminary findings of the feasibility study at a public meeting in October. The preferred solution is to extend water service from Woodland, under the Lewis River. CPU would own and operate the extension.

CPU is talking to residents about forming a local utility district to finance the cost of the project. CPU and ODW also are exploring other funding options.

CCHD is preparing a report on their screening program and drafting a local ordinance to require well screening for arsenic and other potential water contaminants.

## Using partnerships to protect public health

High arsenic levels have not been reduced or eliminated yet in north Clark County, but progress has been made. The individuals with affected wells are educated on the risks of long-term exposure to arsenic, and they know how to protect themselves.

The agencies have also demonstrated the value of using partnerships to solve a public health problem.

- CCHD did most of the ground work in identifying the problem, screening wells and talking to individuals.
- OEHA provided technical assistance and educational information on health risks.
- ODW acted as a liaison between the community and larger utilities and provided funding for the initial studies.
- CPU took the lead in working to provide an alternative water source.
- The City of Woodland has agreed to supply water, if needed.

## How arsenic affects human health

At levels below 10 ppb there is a small chance some people who drink the water for many years could develop circulatory disease, cancer, or other health problems. Most types of cancer and circulatory diseases are due to factors other than long term exposure to arsenic.

At levels above 10 ppb, some people who drink the water for many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

## Treatment technologies that remove arsenic

- Coagulation/filtration uses conventional treatment processes to coagulate arsenic. The treated water is then filtered to remove contaminants.
- Activated alumina removes arsenic from water through adsorption onto alumina.
- Reverse osmosis uses pressure to force water through a membrane filter, leaving arsenic behind.
- Anion exchange removes arsenic through absorption onto a resin. The resin is periodically regenerated with sodium chloride solution.
- Oxidation/filtration oxidizes naturally occurring iron, which binds to arsenic and is removed through filtering.

## Eye on Island County - (Continued from Page 13)

Have a working board of directors to oversee operations, government affairs, membership, insurance and public relations. By all means have a paid secretary or office manager. We elected not to have government members. But, we discuss government issues at every meeting and government representatives are always welcome to attend.

Above all, have fun! Go kick the tires on drinking water!



*Clive Defty (CD) owns King Water Company, a contract operator service that serves as a state-approved Satellite Management Agency for Whidbey Island, Camano Island and Skagit County.*

A former airline pilot and certified public accountant, Defty bought the business from a husband-wife team two-and-a-half years ago, became a certified operator, and hasn't looked back. It seems his experiences as the founder of a bioscience start-up company and vice president of business development for an Internet company have served him well. His company operates and manages many water systems in Island County and has five certified operators on staff.

WT: What interested you most in buying this business?

CD: I had a list of criteria for buying a business and this was the best fit. Among other things, my list included: a proven business concept, barriers to entry for potential competitors, positive cash flow, and a business not dependent on any major customer or subject to industry downturns.

WT: What has been your biggest challenge?

CD: There have been many, but I think the toughest is teaching the public what we do and the value we provide the community. There are many people who don't recognize what we do, how long it takes, or how we can provide a valuable service when we compete with volunteers in the community. This is an early stage industry. I think certification requirements for operators, testing of operators, compliance guidelines and close supervision by the state Department of Health will help move us forward.

WT: What do you like most about this work?

CD: I was surprised by the people and diversity of this business. You have to know a lot about plumbing, electronics, law, microbiology and other topics. I love it!

## Regional CCC Groups - (Continued from Page 11)

The **Spokane Regional Cross-Connection Control Committee**, otherwise known as "SRC4," meets on the third Tuesday of each month and holds its annual seminar in February. Dues are \$20 per year. Additional information is online at [www.src4.org](http://www.src4.org)

In addition to the two Washington groups, there is an interstate CCC committee associated with the Pacific Northwest Section of the American Water Works Association (PNWS-AWWA). The committee meets quarterly and provides CCC education, training and information to water works personnel to protect public drinking water by preventing backflow. Members include utilities, state health agencies, educational institutions, and others in the CCC field from Oregon, Washington and Idaho.

The PNWS-AWWA committee publishes CCC manuals that are widely used in the Pacific Northwest. It recently published five CCC educational brochures that water systems may use in their public education programs. These brochures are available from ODW by calling (800) 521-0323. The committee also funds cross-connection control scholarships for small water systems. Additional information is online at [www.pnws-awwa.org/about\\_committees.cfm](http://www.pnws-awwa.org/about_committees.cfm)

### 2005 List of Backflow Prevention Assemblies Approved for Installation in Washington

The Office of Drinking Water (ODW) has published the 2005 List of Backflow Prevention Assemblies Approved for Installation in Washington. One copy of the list is available to any person or organization involved in the cross-connection control industry in Washington.

To order your copy and receive updates throughout the year, use ODW's online publication database at <http://www.doh.wa.gov/dw/publications/> to request publication number 331-137, or call (800) 521-0323.

# Training and Education Calendar: March - August 2005

<u>Date</u>	<u>Topics</u>	<u>Location</u>	<u>Contact</u>	<u>Phone #</u>	<u>Cost/CEU</u>
March 21-24	27th Annual WA Water/Wastewater Ops Wrkshp (WOW)	Wenatchee	WETRC	1-800-562-0858	Call for info†
March 22	Seasonal System Start-up	Omak	ERWOW	1-800-272-5981	Free/TBA
March 22-23	Advanced Backflow & Cross Connection Control	Chelan	ERWOW	1-800-272-5981	\$25/1.4*
March 23	Seasonal System Start-up	Walla Walla	ERWOW	1-800-272-5981	Free/TBA
March 29-30	BAT Professional Growth Exam Review	Auburn	WETRC	1-800-562-0858	\$205/1.5
March 29	Local Hydrogeology	Long Beach	ERWOW	1-800-272-5981	Free/TBA
March 31	BAT Professional Growth Exam	Auburn	WETRC	1-800-562-0858	\$105/NA
April 4-5	Advanced BAT Troubleshooting & Repair	Auburn	WETRC	1-800-562-0858	\$275/1.4
April 4-15	Backflow Assembly Tester Certification Class	Vancouver	WETRC	1-800-562-0858	\$525/3.0
April 5	Chlorination Basics	Bremerton	ERWOW	1-800-272-5981	\$25/0.7*
April 5	Water Source Development and Treatment	Kennewick	WETRC	1-800-562-0858	\$145/0.7
April 5-7	Water Works Basics	Lacey	WETRC	1-800-562-0858	\$275/2.1
April 6	Chlorination Basics	Kelso	ERWOW	1-800-272-5981	\$25/0.7*
April 6-8	Water & Wastewater Disinfection	Richland	WETRC	1-800-562-0858	\$275/2.1
April 6-8	Water Works Basics	Auburn	WETRC	1-800-562-0858	\$275/2.1
April 7	Local Hydrogeology	Mt. Vernon	ERWOW	1-800-272-5981	Free/TBA
April 8	Asbestos Cement Pipe Work Practice Procedures	Spokane	WETRC	1-800-562-0858	\$145/0.7
April 11-14	Backflow Assembly Tester Certification Class	Auburn	WETRC	1-800-562-0858	\$525/3.0
April 12	Chlorination Basics	Yakima	ERWOW	1-800-272-5981	\$25/0.7*
April 12	Local Hydrogeology	Omak	ERWOW	1-800-272-5981	Free/TBA
April 13	Water Sampling Basics	Richland	ERWOW	1-800-272-5981	\$25/0.7*
April 13-15	Basic Electrical	Auburn	WETRC	1-800-562-0858	\$275/2.1
April 14	Water Sampling Basics	White Salmon	ERWOW	1-800-272-5981	\$25/0.7*
April 15	Backflow Assembly Tester Certification Exam	Auburn	WETRC	1-800-562-0858	\$180/NA
April 16	Backflow Assembly Tester Certification Exam	Vancouver	WETRC	1-800-562-0858	\$180/NA
April 18-21	Backflow Assembly Tester Certification Class	Auburn	WETRC	1-800-562-0858	\$525/3.0
April 19	Water Sampling Basics	Bellingham	ERWOW	1-800-272-5981	\$25/0.7*
April 19-21	Pump Operation and Maintenance	Wenatchee	WETRC	1-800-562-0858	\$275/2.1
April 19-28	BAT Professional Growth Exam Review	Vancouver	WETRC	1-800-562-0858	\$205/1.5
April 20	Water Sampling Basics	Shelton	ERWOW	1-800-272-5981	\$25/0.7*
April 21	Local Hydrogeology	Yakima	ERWOW	1-800-272-5981	Free/TBA
April 22	Backflow Assembly Tester Certification Exam	Auburn	WETRC	1-800-562-0858	\$180/NA
April 25-26	BAT Professional Growth Exam Review	Auburn	WETRC	1-800-562-0858	\$205/1.5
April 25	Small Water System Management	Shelton	WETRC	1-800-562-0858	\$25/0.7*
April 26	Local Hydrogeology	Morton	ERWOW	1-800-272-5981	Free/TBA
April 26	Water System Controls, Monitoring and Alarm Basics	Auburn	WETRC	1-800-562-0858	\$25/0.7*
April 27	BAT Professional Growth Exam	Auburn	WETRC	1-800-562-0858	\$105/NA
April 27	Water Sampling Basics	Yelm	ERWOW	1-800-272-5981	\$25/0.7*
April 28	Competent Person Cave in Protection	Centralia	WETRC	1-800-562-0858	\$210/1.4
April 30	BAT Professional Growth Exam	Vancouver	WETRC	1-800-562-0858	\$105/NA
May 2-5	Backflow Assembly Tester Certification Class	Auburn	WETRC	1-800-562-0858	\$525/3.0

\*Operators of Group A small water systems serving 3,300 people or less will be charged a \$25 registration fee for these classes.  
† These classes are free for Operators of Group A small Water Systems serving 3,000 people or less

# Training and Education Calendar: March - August 2005

<u>Date</u>	<u>Topics</u>	<u>Location</u>	<u>Contact</u>	<u>Phone #</u>	<u>Cost/CEU</u>
May 2-13	Backflow Assembly Tester Certification Class	Vancouver	WETRC	1-800-562-0858	\$525/3.0
May 3	Water Distribution Specialist Certification Exam Review	Richland	WETRC	1-800-562-0858	\$25/0.7*
May 3-5	Water Distribution Certification Exam Review	Auburn	WETRC	1-800-562-0858	\$25/\$275/2.1*
May 4-5	Process Control & Instrumentation	Moses Lake	WETRC	1-800-562-0858	\$225/1.4
May 4-6	PNWS-AWWA: Conference	Portland	AWWA	pnwsawwa@teleport.com	TBA
May 6	Backflow Assembly Tester Certification Exam	Auburn	WETRC	1-800-562-0858	\$180/NA
May 9-10	BAT Professional Growth Exam Review	Auburn	WETRC	1-800-562-0858	\$205/1.5
May 9-11	Cross Connection Control Basics and Exam Review	Auburn	WETRC	1-800-562-0858	\$275/2.1
May 10	Large Meter Selection/Installation/Testing	Goldendale	ERWOW	1-800-272-5981	Free
May 10-12	Water Distribution Exam Review	Moses Lake	ERWOW	1-800-272-5981	\$180/\$230/2.1†
May 10-12	Cross Connection Control Exam Review	Mt. Vernon	ERWOW	1-800-272-5981	\$180/\$230/2.1†
May 11	BAT Professional Growth Exam	Auburn	WETRC	1-800-562-0858	\$105/NA
May 11	Large Meter Selection/Installation Review	Moses Lake	ERWOW	1-800-272-5981	Free
May 12	Large Meter Selection/Installation Review	Newport	ERWOW	1-800-272-5981	Free
May 13	BTO/WTPO OIT and Level 1 Cert Exam Review	Auburn	WETRC	1-800-562-0858	\$25/0.7*
May 14	Backflow Assembly Tester Certification Exam	Vancouver	WETRC	1-800-562-0858	\$180/NA
May 17	Large Meter Selection/Installation Review	Kelso	ERWOW	1-800-272-5981	Free
May 17	Water Distribution Specialist Certification Exam Review	Mt. Vernon	WETRC	1-800-562-0858	\$25/0.7*
May 17-18	BAT Professional Growth Exam Review	Pasco	WETRC	1-800-562-0858	\$205/1.5
May 17-18	Emergency Planning for Water and Wastewater Utilities	Everett	WETRC	1-800-562-0858	\$195/1.4
May 17-19	Water Distribution Certification Exam Review	Lacey	WETRC	1-800-562-0858	\$25/\$275/2.1*
May 17-26	BAT Professional Growth Exam Review	Vancouver	WETRC	1-800-562-0858	\$205/1.5
May 18	Large Meter Selection/Installation/Testing	Shelton	ERWOW	1-800-272-5981	Free
May 19	Backflow Assembly Tester Professional Growth Exam	Pasco	WETRC	1-800-562-0858	\$105/NA
May 20	BTO/WTPO OIT and Level 1 Cert Exam Review	Spokane	WETRC	1-800-562-0858	\$25/0.7*
May 23	Water System Controls, Monitoring and Control Basics	Richland	WETRC	1-800-562-0858	\$25/0.7*
May 23-25	Cross Connection Control Basics and Exam Review	Yakima	WETRC	1-800-562-0858	\$275/2.1
May 23-26	Backflow Assembly Tester Certification Class	Pasco	WETRC	1-800-562-0858	\$525/3.0
May 24-26	Cross Connection Control Exam Review	Richland	ERWOW	1-800-272-5981	\$180/\$230/2.1†
May 24-26	Water Distribution Exam Review	Olympia	ERWOW	1-800-272-5981	\$180/\$230/2.2†
May 24	Small Water System Management	Spokane	WETRC	1-800-562-0858	\$25/0.7*
May 25-27	Water Distribution Certification Exam Review	Everett	WETRC	1-800-562-0858	\$275/2.1*
May 27	Backflow Assembly Tester Certification Exam	Pasco	WETRC	1-800-562-0858	\$180/NA
May 28	BAT Professional Growth Exam	Vancouver	WETRC	1-800-562-0858	\$105/NA
May 31-June 2	Cross Connection Control Exam Review	Olympia	ERWOW	1-800-272-5981	\$180/\$230/2.1†
May 31-June 2	Water Distribution Exam Review	Mt. Vernon	ERWOW	1-800-272-5981	\$180/\$230/2.2†
June 1-2	Advanced BAT Troubleshooting & Repair	Auburn	WETRC	1-800-562-0858	\$275/1.4
June 1-3	Basic Electrical	Richland	WETRC	1-800-562-0858	\$275/2.1
June 6	Asbestos Cement Pipe Work Practice Procedures	Auburn	WETRC	1-800-562-0858	\$145/0.7
June 6-9	Backflow Assembly Tester Certification Class	Auburn	WETRC	1-800-562-0858	\$525/3.0
June 7	Automatic Control Valves	Vancouver	ERWOW	1-800-272-5981	Free

\*Operators of Group A small water systems serving 3,300 people or less will be charged a \$25 registration fee for these classes.  
† These classes are free for Operators of Group A small Water Systems serving 3,000 people or less

# Training and Education Calendar: March - August 2005

<u>Date</u>	<u>Topics</u>	<u>Location</u>	<u>Contact</u>	<u>Phone #</u>	<u>Cost/CEU</u>
June 7	Water Sampling Basics	Colville	ERWOW	1-800-272-5981	\$25/0.7*
June 8	Water Sampling Basics	Moses Lake	ERWOW	1-800-272-5981	\$25/0.7*
June 9	Cross Connection Control & Backflow Basics	Tacoma	ERWOW	1-800-272-5981	\$25/0.7*
June 10	Backflow Assembly Tester Certification Exam	Auburn	WETRC	1-800-562-0858	\$180/NA
June 13-14	BAT Professional Growth Exam Review	Auburn	WETRC	1-800-562-0858	\$205/1.5
June 14	Water Sampling Basics	Chelan	ERWOW	1-800-272-5981	\$25/0.7*
June 14-16	Pump Operation and Maintenance	Auburn	WETRC	1-800-562-0858	\$275/2.1
June 15	BAT Professional Growth Exam	Auburn	WETRC	1-800-562-0858	\$105/NA
June 15	Water Sampling Basics	Yakima	ERWOW	1-800-272-5981	\$25/0.7*
June 17	Basic Pump Operation and Maintenance	Auburn	WETRC	1-800-562-0858	\$25/0.7*
June 21	Water Sampling Basics	Port Angeles	ERWOW	1-800-272-5981	\$25/0.7*
June 22-23	Advanced Backflow & Cross Connection Control	Yakima	ERWOW	1-800-272-5981	\$25/1.4*
June 29-30	Competent Person Cave In Protection	Auburn	WETRC	1-800-562-0858	\$210/1.4
July 7	Confined Space Entry	Richland	WETRC	1-800-562-0858	\$140/0.7
July 14	Equipment Expo	Satsop	ERWOW	1-800-272-5981	\$10/\$15
July 14	Local Hydrogeology	Liberty Lake	ERWOW	1-800-272-5981	Free/TBA
July 20	Automatic Control Valves	Bellingham	ERWOW	1-800-272-5981	Free
July 21	Local Hydrogeology	Clarkston	ERWOW	1-800-272-5981	Free/TBA
Aug 2	Water System Leakage	Spokane	ERWOW	1-800-272-5981	Free
Aug 3	Water System Leakage	Richland	ERWOW	1-800-272-5981	Free
Aug 4	Cross Connection Control & Backflow Basics	Centralia	ERWOW	1-800-272-5981	\$25/0.7*
Aug 4	Water System Leakage	Wenatchee	ERWOW	1-800-272-5981	Free
Aug 11	Cross Connection Control & Backflow Basics	Moses Lake	ERWOW	1-800-272-5981	\$25/0.7*
Aug 11-12	Competent Person Cave In Protection	Auburn	WETRC	1-800-562-0858	\$210/1.4
Aug 16	Water System Leakage	Mt. Vernon	ERWOW	1-800-272-5981	Free
Aug 17	Water System Leakage	Monroe	ERWOW	1-800-272-5981	Free
Aug 18	Water System Leakage	Lacey	ERWOW	1-800-272-5981	Free
Aug 24	Local Hydrogeology	Colville	ERWOW	1-800-272-5981	Free

\*Operators of Group A small water systems serving 3,300 people or less will be charged a \$25 registration fee for these classes.

† These classes are free for Operators of Group A small Water Systems serving 3,000 people or less

For information about distance learning activities contact WETRC at 1-800-562-0858

## Additional Training Links:

AWWA King County Subsection Web site—<http://www.kcawwa.org/>

ERWOW Web site—<http://www.erwow.org/>

WETRC Web site—<http://www.wetrc.org/>

AWWA Pacific Northwest Section Web site—<http://www.pnws-awwa.org/>

EPA electronic workshops Web site—<http://www.epa.gov/safewater/dwa/electronic.html>

**For the complete Training Calendar visit the Drinking Water Homepage and click on Training - [www.doh.wa.gov/ehp/dw](http://www.doh.wa.gov/ehp/dw)**

NOTE: Links to external resources are provided as a public service, and do not imply endorsement by the Washington State Department of Health.

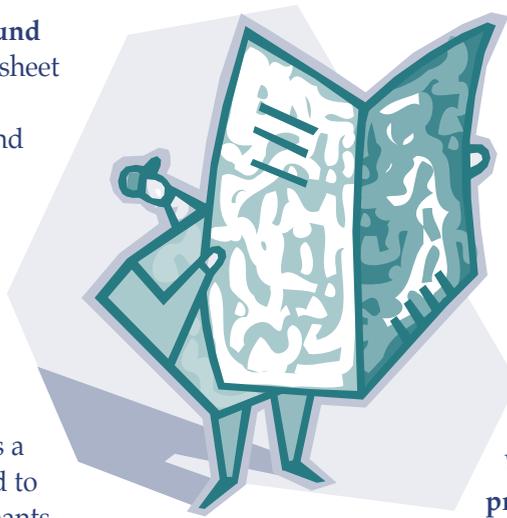
# ▪ New & Revised Publications ▪

**Drinking Water State Revolving Fund (331-233).** Revised. A two-page fact sheet with general information about the Drinking Water State Revolving Fund Program, loan requirements, and systems that have received loans.

**Tabletop exercise planning guide for public water systems (331-279).** New! An 87-page booklet that provides a framework for developing effective tabletop exercises. A well run exercise allows a utility to assess its ability to respond to emergencies, and acquaints participants from many agencies with each others' emergency responsibilities and procedures.

**Drinking water emergency exercises: Summary report (331-280).** New! This 21-page booklet compiles the results and information learned at three tabletop exercises conducted with water utilities in Kennewick, Vancouver and Redmond.

**Distance education reimbursement (331-281).** New! A two-page fact sheet describing a one-year pilot program to reimburse certified operators of small water systems in Washington for successful completion of approved distance education.



**Compliance requirements for Group B water systems (331-282).** Revised. A two-page fact sheet on the key sampling, record-keeping, reporting, system maintenance and operating requirements Group B water systems must meet.

**Water system capacity (331-283).** New! Two-pages of questions and answers on water system capacity. Defines water system capacity, the benefits of reaching full capacity, and how to get there.

**Water quality self-assessment: A preliminary guide for testing school water quality (331-284).** New! A four-page document that walks you through a series of questions to determine if sampling for lead is necessary at your school.

**Long term 1 enhanced surface water treatment rule (331-285).** New! A two-page fact sheet that explains new monitoring and treatment requirements for public water systems serving fewer than 10,000 people that use surface water or groundwater under the influence of surface water. The rule went into effect Jan. 1, 2005.

Office of Drinking Water publications are available on the Internet at [http://www.doh.wa.gov/ehp/dw/our\\_main\\_pages/public.htm](http://www.doh.wa.gov/ehp/dw/our_main_pages/public.htm) or by calling (800) 521-0323.

## Cheryl Bergener elected 2005 President of ABC

Cheryl Bergener, manager of the Water Works Operator Certification Program at the Office of Drinking Water (ODW), has been elected president of the Association of Boards of Certification (ABC).

ABC is a professional association with members representing certification programs from 44 states and 10 Canadian provinces. ABC works with these programs to improve and strengthen certification laws, promote certification programs, help establish new certification programs based on ABC policies and procedures, and promote uniformity of standards and practices.

ODW uses ABC's exams to certify water works operators.

During her term, Bergener's goals are to:

- Continue ABC's excellence in exam development.
- Establish nationally accepted standards for training relevancy for all water and wastewater operators.
- Establish a nationally accepted operator Code of Ethics.

Bergener is the second Washington representative to serve as president of ABC. Peggy Barton, associate director of Certification Services at the Washington Environmental Training Center, served as president in 2000.

May 1 to 7

# is Drinking Water Week!

Too many people take their drinking water for granted. Drinking Water Week is a perfect opportunity for water systems and their customers to recognize the vital role water plays in our daily lives.

Join utilities, communities and other groups across the country as they celebrate our most precious natural resource. The American Water Works Association offers free information to anyone with an interest in promoting, educating, or simply learning more about the water they drink. For celebration ideas, materials, promotional opportunities and other tools, check out the Web site at <http://www.awwa.org/Advocacy/dww/>



## In This Issue

The following people contributed to the production of this issue of *the Water Tap*: John Aden, Andy Anderson, Stephen Baker, Peggy Barton, Andres Cervantes, Denise Clifford, Nancy Feagin, Chris Gagnon, Judy Jones, Amy Koch, Denise Lahmann, Jolyn Leslie, Meliss Maxfield, Chris McCord, Ethan Moseng, Terri Notestine, Theresa Phillips, Mark Soltman, Mark Toy, Linda Waring (Editor). The Department of Health, Office of Drinking Water, publishes *the Water Tap* to provide information to water system owners, water works operators, and others interested in drinking water. Comments and questions are welcome.

Past issues are available by writing to the editor, *the Water Tap*, Office of Drinking Water, PO Box 47828, Olympia, WA 98504-7828, or e-mail your request to [linda.waring@doh.wa.gov](mailto:linda.waring@doh.wa.gov). Past issues are also available on the Web site at [http://www.doh.wa.gov/ehp/dw/our\\_main\\_pages/watertap.htm](http://www.doh.wa.gov/ehp/dw/our_main_pages/watertap.htm)

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