

Pipeline

Risk communication 101

by Karen Kelley

Have you ever had to issue a public notice concerning water quality to your customers? Have you ever had to notify your customers of a water emergency? Have you ever spoken in a public meeting or with the media regarding a water quality or system problem? If you answered yes to any of these questions, you have likely experienced anxiety and stress over the content of your message, your delivery options, and answering the onslaught of inquiries that followed. The purpose of this article is to help you prepare for these scenarios and lessen the impacts that follow them.

What is risk communication anyway?

The actual definition of risk communication is "a science-based approach for communicating

Continued on page 2

Contents

Risk communication 101	1
Outstanding performance designation of public water systems.....	1
Consumer Confidence Reports (CCR) —	4
Contact change for circuit rider.....	5
Cross Connection/Backflow Prevention	5
Conventional and direct filtration:.....	6
Emergency management achievements honored.	7
Operator certification corner	9
Meeting calendar.....	11
Training calendar	11

Outstanding performance designation of public water systems

by Kari Salis, P.E.

The Drinking Water Program (DWP) has identified criteria for determining outstanding performance by a public water system. The current designation only applies to systems using surface water. However, once the state adopts the Groundwater Rule in mid-2009, it will apply to groundwater systems as well. This designation is given at the completion of a water system survey, formerly referred to as a sanitary survey. A water system survey is an on-site review of a system's sources, treatment, storage facilities, distribution system, monitoring, management, and operation and maintenance procedures. This review evaluates the system's capability of providing safe water to the public. Systems designated as outstanding performers will have their water system survey frequency and fee schedule reduced from every three years to every five years.

The criteria for outstanding performance are:

1. No Maximum Contaminant Level (MCL) or treatment technique violations in the last five years;
2. No more than one monitoring and reporting violation in the last three years. The one violation must be resolved and results submitted;

Continued on page 4

effectively in high concern and low trust situations and/or sensitive or controversial situations.”¹ Water issues have been sensitive and controversial since the dawn of time. Since drinking water quality is among Americans’ top environmental concerns, you can understand the importance of using good communication skills when notifying the public and system stakeholders of any problems.

Consider this: Your notice of a water quality problem will likely result in a customer or stakeholder perception of losing something of value, such as health, safety, job security, wealth (i.e. property values), natural resources or community. The public’s perception is reality to them. Effective risk communication is a two-part process: addressing the values of your audience and explaining risks, data and quantitative information. Until you address the values, people are resistant to listening to and understanding the message.¹

Goal: Build trust and credibility in your professionalism, commitment and expertise as a water operator and/or system so that your message will be received the way it is intended. Members of the public consider whether they can trust your message based on their trust for you as an individual, your agency, the process and the ultimate outcome. To build this trust and credibility, consider using the points below in your communication (summarized from [1]). These points can affect all communication media including fact sheets, public notices, reports, news releases, media interviews, public forums and meeting displays:

1. Know your audience and who they believe to be credible sources of information. Use these sources as the communication messengers. Make sure the messengers you choose have the proper expertise and communication skills, as well as adequate preparation time.
2. Show empathy and caring in the communication. Examples:
 - State why this issue is important to you on a personal level.
 - Acknowledge the importance of the issue for all stakeholders.

- Relate how the issue also affects your life and sense of community.
3. Be honest and open. Examples:
 - Tell them what you do know.
 - Admit if you do not know the answer to a question. Identify the unknown and note when people can expect to get the information. Follow up as soon as possible with the answer.
 - Always respond as if there is no such thing as a bad or unimportant question.
 4. Express your commitment and dedication to resolving the issue.
 - Reveal the level of resources directed toward resolving the issue.
 - Let them know you will stay on task until the issue is resolved.
 - Offer follow-up, keep the promise and stay on schedule.
 5. Exhibit your competence and expertise.
 - State what you’ve done to prepare for the communication and your practical experience with the specific issue. In other words, establish your qualifications to speak on an issue.
 - Use your knowledge to help your audience members understand the issue at their level.

What about mandatory public health notices?

Do you have to use the EPA templates as instructed? The answer is no. These templates (link below) were created to simplify the mandatory notification process. The templates include the minimum required content and standard language. You can decide to use these templates as-is, add additional information to the notices or write your own notice from scratch (being sure to include the mandatory content and standard language). We encourage you to make use of these templates, but consider incorporating the trust/credibility points made above when applicable to the situation.

Additional tips for effective risk communication:²

- Provide simple, straightforward, consistent messages.
- Describe potential adverse health effects and populations at risk.
- Describe actions you are taking to correct the situation and when you anticipate it will be resolved.
- Describe actions the consumer can take such as using alternate water supplies and seeking medical help at the appropriate time.
- Provide links to useful information resources.
- Use graphics, photos, maps, charts and drawings to illustrate your messages.
- Assume that consumers will only read the top half of the notice or what can be read in ten seconds, and plan to grab their attention in the beginning of the notice to entice them to read further.
- Display important elements in bold and/or large type in the top half of the notice.
- Communicate in multiple languages to meet the needs of your non-English-speaking consumers.
- Include your e-mail and phone number in all communication (see No. 1 above).
- Anticipate the questions that will result from this communication and prepare answers in advance.

Where to go for more help

- Call your DHS Drinking Water Program representative, County Environmental Health Program or Department of Agriculture associate for help in developing your communication:
<http://oregon.gov/DHS/ph/dwp/Telephone.pdf>

- U.S. EPA. Drinking Water Academy risk communication under the Safe Drinking Water Act:
www.epa.gov/safewater/dwa/course-genint.html#riskcomm.
- U.S. EPA. Seven cardinal rules of risk communication:
www.epa.gov/CARE/library/7_cardinal_rules.pdf.
- U.S. EPA. Talking to your customers about chronic contaminants in drinking water:
www.epa.gov/safewater/contaminants/pdfs/fs_contaminants_chronic_talkingtocustomers.pdf.
- Oregon Administrative Rules for public notice:
<http://oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0042.pdf>
- Public notification templates and fact sheets:
<http://oregon.gov/DHS/ph/dwp/tools.shtml#mtable>.

References cited:

¹ U.S. Environmental Protection Agency (EPA), 2001. Risk communication and the Safe Drinking Water Act. Drinking Water Academy course manual. Unpublished:
www.epa.gov/safewater/dwa/course-genint.html#riskcomm.

² U.S. Environmental Protection Agency (EPA), 2007. Talking to your customers about chronic contaminants in drinking water. Office of Water, EPA 816-F-07-022:
www.epa.gov/safewater/contaminants/pdfs/fs_contaminants_chronic_talkingtocustomers.pdf.

Karen Kelley, Registered Sanitarian and interim manager for the Technical Services Unit Region 2 of the Drinking Water Program, can be reached at 541-726-2587 ext. 22 or karen.e.kelley@state.or.us.

3. No significant deficiencies identified during the current water system survey; and
4. No waterborne disease outbreak attributable to the water system in the last five years.

To check your water system's violation history, go to www.oregon.gov/dhs/ph/dwp, and click on "Data Online." Type in your water system name or public water system (PWS) ID number. The date of the last survey is listed on this page. Toward the bottom of that page, under "For further information...", click on "Violations."

- An MCL violation will have "MCL" in the violation type column.
- Treatment technique violations are for inadequate filtration, disinfection and corrosion control.
- If the system has one monitoring and reporting violation during the last three years, there must be a subsequent monitoring result for that contaminant on record in order to meet criterion No. 2.

We strongly encourage **all** systems to meet the outstanding performance criteria. Your customers will appreciate hearing their system's status. We will review your system's designation for outstanding performance after completion of each water system survey. The designation will remain in effect as long as the criteria continue to be met.

If you have any questions relating to compliance with any of these criteria, please discuss them with your regional drinking water program or county health department staff person, or call the DWP at 971-673-0405.

Kari Salis, P.E., an environmental engineer in the Technical Services Unit of the Drinking Water Program, can be reached at 971-673-0423 or karyl.l.salis@state.or.us.

Consumer confidence reports (CCR) —

REMINDER: New lead reporting requirements for the 2008 CCR

by Tom Mitchell

The Environmental Protection Agency (EPA) has added important mandatory language about lead that will need to be incorporated into future CCRs. This change will become effective with the 2008 CCR, which is due no later than July 1, 2009, to customers and the Drinking Water Program.

Starting with the 2008 report, the following statement about lead in drinking water and its effects is **required — regardless of lead levels occurring in any samples:**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. {NAME OF WATER UTILITY} is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

A system may write its own statement, but only in consultation with the Drinking Water Program. It must be reviewed and pre-approved by the program prior to distribution. Additional facts on lead in drinking water may also be included in the CCR.

Tom Mitchell, of the Protection, Planning and Certification Unit of the Drinking Water Program, can be reached at 971-673-0417 or thomas.j.mitchell@state.or.us.

Contact change for circuit rider

by Ron Hall

HBH Engineering, our contract circuit rider, recently announced changes in the organization structure.

A key change relates to the communication point for requesting circuit rider services.

Future circuit rider requests should be directed to:

Robert Henry, P.E.
HBH Consulting Engineering
20015 S.W. Pacific Hwy Suite 101
Sherwood, Or 97140
503-625-8065
FAX: 503-626-1531

We would also like to thank those systems who responded to our recent survey that assessed their level of satisfaction with the Circuit Rider program's services. We rely on these surveys to help us address and improve the responsiveness and quality of the services provided.

Ron Hall is the Unit Manager for the Protection, Planning & Certification Unit of the Drinking Water Program/ 971-673-0409 or ronald.a.hall@state.or.us

Cross Connection/Backflow Prevention

by Michael Perry

The status of your public water system's Cross Connection Program can now be found on your system's home page in the Safe Drinking Water Information System (SDWIS). You will be able to see if your water district has submitted its enabling authority document. You will also be able to see your district's last three annual summary reports. Note that the status of the enabling authority may indicate "Draft" or "Questionable." We will review and update the status elements over the coming months.

The next meeting of the Cross Connection Advisory Board is Nov. 19, 2008, 10 a.m. at the Portland State Office Building in Room 612. The Portland State Office Building is located at 800 N.E. Oregon Street in Portland. The public is invited to attend. We are still looking for a board member from the general public. If you are interested or would like to recommend someone, please call Michael Perry at 971-673-1220.

Michael Perry, the Cross Connection/Backflow Prevention Program coordinator, can be reached at 971-673-1220 or michael.perry@state.or.us.

Conventional and direct filtration:

Individual filter effluent turbidity may trigger required action

by James Nusrala and Kari Salis

Conventional and direct filtration plants must measure the turbidity of the water coming directly out of each filter bed just before it goes into the clear well. It is used as an indicator of the presence of disease-causing organisms. Turbidity is measured to determine the effectiveness of the filtration units and to establish when to backwash the filters. Turbidity measurement is required at two locations: the combined filter effluent (CFE), at a point where water from all filter beds combine but is upstream of any storage; and at the individual filter effluent (IFE), immediately after each filter bed. The monitoring frequency for CFE is at least every four hours, while the frequency for IFE is continuously every 15 minutes.

Certain circumstances require the water system to take corrective actions. Follow-up and reporting requirements for systems that treat with conventional or direct filtration have been established based on the IFE turbidity values. These requirements are outlined in Oregon Administrative Rules, (OAR) 333-61-0040(1)(e)(B)(ii) and -0040(1)(e)(C)(i), as summarized below. If a system only has one or two filter beds and does not measure IFE, these triggers apply to combined filter effluent readings. It is important to implement the corrective action to assure that the filter bed is functioning at an optimal level so that disease-causing organisms do not pass through and cause illness among your customers.

The individual filter effluent (IFE) turbidity triggers and the corresponding required actions are as follows. The below table notes the corresponding actions for water systems serving populations of 10,000 or greater (A), and those systems serving fewer than 10,000 people (B) for the four triggers. Corrective actions are explained following the table.

TRIGGER	A. REQUIRED ACTIONS = 10,000 OR MORE PEOPLE	B. REQUIRED ACTIONS = FEWER THAN 10,000 PEOPLE
1. The IFE turbidity is greater than 1.0 nephelometric turbidity units (NTU) in two consecutive measurements taken 15 minutes apart.	Report the filter number, turbidity values over 1.0 NTU, dates of occurrence and the cause. DWP may request a turbidity profile ^(a) from the filter.	
2. The IFE is greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart for three consecutive months.	Report filter number, turbidity level and date of occurrence. Also, must conduct a filter self-assessment ^(b) within 14 days of the third high turbidity level.	Conduct a filter self-assessment ^(b) within 14 days of the third high turbidity level. A comprehensive performance evaluation (CPE) ^(c) may be conducted in lieu of a filter self-assessment.
3. The IFE is greater than 2.0 NTU in two consecutive readings taken 15 minutes apart for two consecutive months.	Report filter number, turbidity level and date of occurrence. Arrange to have a CPE ^(c) conducted within 30 days of the second month of the high turbidity, and submit CPE within 90 days of the second month of high turbidity.	Arrange to have a CPE ^(c) conducted within 60 days of the second month of the high turbidity, and submit CPE within 120 days of the second month of high turbidity. Report the turbidity results and the date of second high turbidity reading and make your request for a CPE by the 10th of the following month.
4. The IFE is greater than 0.5 NTU in two consecutive readings taken 15 minutes apart within the first four hours of continuous filter operation after the filter has been backwashed or has been off-line.	Report filter number, turbidity level and date of occurrence. Produce a filter profile within seven days of the incident or report the reason for the abnormal filter performance if known.	No required action for these systems

Explanation of required actions:

(a) A **turbidity profile** is a graph of the turbidity over time, immediately following a backwash cycle. The graph should include readings taken every minute or so from the time water is flowing through the filter, even if there is a filter-to-waste period. The peak turbidity should be noted, as well as how long the filter took for the turbidity to drop below 0.3 NTU, and how long it took to get below 0.1 NTU.

(b) A **filter self-assessment** consists of

- Assessment of filter performance;
- Development of a filter profile;
- Identification and prioritization of factors limiting filter performance;
- Assessment of the applicability of corrections;
- Preparation of a filter self-assessment report detailing the conclusion;
- Submission of dated report by the 10th of the month following the incident.

(c) A **comprehensive performance evaluation (CPE)** is a thorough evaluation of an existing treatment plant, resulting in a comprehensive assessment of the unit process capabilities, as well as the effect of operation, maintenance and administrative practices on the plant's performance. The results of the evaluation establish the plant capacity and list a set of prioritized factors limiting performance.

James Nusrala, P.E., an environmental engineer in the Drinking Water Program's Technical Services Unit, can be reached at 971-673-0459 or james.b.nusrala@state.or.us.

Kari Salis, P.E., an environmental engineer in the Technical Services Unit of the Drinking Water Program, can be reached at 971-673-0423 or karyl.l.salis@state.or.us.

Emergency management achievements honored

by Mike Gotterba

The Oregon Emergency Management Association (OEMA) has announced the winners of its 2008 President's Award and its Innovation, Coordination, and Service Awards. The awards were announced and presented April 23 at the OEMA annual conference in Sunriver.

John Vanderzanden received the OEMA President's Award for extensive contributions to the emergency management profession. Vanderzanden was honored for his career accomplishments with Marion County Emergency Management.

Awards were also made to **OEMA members and partners** in recognition of special achievement in the areas of innovation, coordination or service to their jurisdictions, the emergency management community and the citizens of Oregon.

The **Oregon Water/Wastewater Agency Response Network (ORWARN)** received the OEMA Partner Award for Innovation for developing a mutual aid network for public and private water and wastewater utilities in Oregon. Oregon water utility workers formed the network as a result of lessons learned in New Orleans in the response to Hurricane Katrina. Mike Gotterba, City of Salem Public Works and chair of ORWARN, accepted the award on behalf of ORWARN.

The **Oregon State Fire Marshal's Incident Management Red Team** received the OEMA Partner Award for Coordination for support to the Vernonia Emergency Operations Center (EOC) during the December 2007 severe storm event. With limited local staff available for an ongoing event, the team provided needed relief for the EOC staff and support to sustain emergency operations in Vernonia. Chief Deputy State Fire Marshal Randy Simpson accepted the award on behalf of the team.

Continued on page 8

Jessica Pankratz, Linn County Sheriff's Office volunteer, received the OEMA Partner Award for Service for her volunteer work for Linn County Emergency Management. She developed and presented pandemic influenza preparedness and continuity information to 200 Linn County Sheriff's Office employees and more than 300 members of other organizations in the community.

Deb Treusdell, City of Seaside tsunami preparedness coordinator, received the OEMA Member Award for Innovation. She used innovative activities such as "Tsunami Jeopardy" and "PrepareWare" parties – similar to Tupperware parties – where neighbors gathered in private homes to learn about tsunami preparedness. These activities help individuals and groups prepare to survive without electricity, communications or outside help after a storm or tsunami.

Krista Rowland, Marion County Emergency Management, received the Member Award for Coordination at the local level. She coordinated incident management training that helped six Oregon counties meet federal training requirements and resulted in more than 450 emergency response personnel receiving the required training.

Randy Shaw, Oregon Department of Human Services Public Health Division, received the Member Award for Coordination at the state level. He played a critical role in planning public health and medical services activities for Oregon's Top Officials (TOPOFF) 4 national level exercise in October 2007, and was the incident manager for the Public Health Agency Operations Center's response and recovery efforts during the December 2007 severe storm disaster.

Vicky Vose received the Member Award for Service. During the December 2007 severe storm disaster, she reported to the Columbia County Emergency Operations Center where she served as Logistics Section chief even though her last working day for Columbia County was several days before the storm began.

OEMA, a statewide association of Oregon's emergency management professionals, is committed to minimizing the effect of disasters on communities throughout Oregon.

Mike Gotterba, the emergency preparedness/communications manager for Salem Public Works, can be reached at 503-588-6347 or mgotterba@cityofsalem.net.



Operator certification corner

Work force survey results!

by Dottie Reynolds

The final results of the Fall 2007 Work Force Survey is complete. I want to thank everyone who completed the survey. A national study conducted by the American Water Works Association (AWWA) a few years ago estimated that almost 50 percent of today's water and wastewater operators would retire within the next five to seven years. Oregon appears to be different. Our survey indicates that approximately 38 percent of Oregon drinking water operators plan to retire in five to eight years. Following are the details from the survey.

There are 789 certified treatment operators and 1,512 distribution operators in Oregon, for a total of 2,301 certifications of which 541 are combination certificates for a total of 1,760 individuals, who received surveys. The number of surveys returned was 1,246, or 71 percent. The number of incomplete or otherwise unusable surveys was 156 (or 9 percent), bringing the total number of complete surveys to 1,090, or 62 percent. Three common reasons for unusable surveys were that the certification level was left blank (or marked with an X); the number of years of experience was left blank; or the number of years towards retirement was not checked.

Table 1. represents the future retirement plans of operators responding to the survey who hold **treatment** certifications.

TREATMENT	
Years to retirement	Number of operators
0-4	110
5-8	89
9-11	86
12-15	98
15+	149

Table 1.



Approximately 38 percent of Oregon drinking water operators plan to retire in five to eight years.

Table 2. represents the total number of operators responding to the survey who hold **distribution** certifications.

DISTRIBUTION	
Years to retirement	Number of operators
0-4	188
5-8	168
9-11	137
12-15	146
15+	301

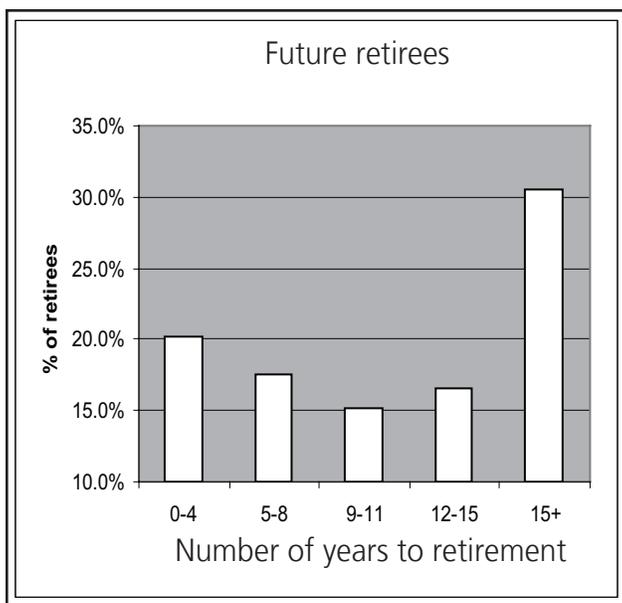
Table 2.

Table 3. and **Graph 1.** represent the retirement plans of operators, by years to retirement, from 1,472 surveys returned. The total number of surveys returned, **by certification type, is 1,472.** This is greater than the total number of surveys returned (1,090) because of those operators responding who hold both distribution and treatment certifications.

FUTURE RETIREES	
Years to retirement	Percentage
0-4	20.2%
5-8	17.5%
9-11	15.1%
12-15	16.6%
15+	30.6%

Table 3.

Continued on page 10



Graph 1.

The data show that Oregon operators are retiring in a balanced manner, which differs from the national trend. The information also shows that there will be opportunity for young people in this field for the foreseeable future.

In 2007, when we first heard about the national shortfall of operators, The Drinking Water Program and Oregon Department of Environmental Quality's (DEQ) Wastewater Operator Certification Program produced a joint environmental career brochure for high school seniors and college students. We saw this as a means of educating young people on the opportunities available in the field. We have distributed them to community colleges and high school career counselors. Local members of the AWWA have attended local career fairs this past year handing out the environmental career brochure and talking to students. At one of the career fairs many students visited the water information table to ask questions and pick up the brochure. Many commented that they had no idea about the water profession! Tell students in YOUR area about this profession. Stress the career benefits and rewards to be found in protecting the public health and the environment, and in providing a much needed and valuable service to the community.

Thanks again to all who participated in the Work Force Survey.

Dottie Reynolds, the Operator Certification Program coordinator in the Drinking Water Program, can be reached at 971-673-0426 or dottie.e.reynolds@state.or.us.

Meeting calendar

Drinking Water Advisory Committee

Department of Human Services
Diane Weis, 971-673-0427

Jan. 14, 2009

April 8, 2009

All meetings are held at the Public Utility Commission Office, 550 Capitol St. N.E., Salem, OR 97310

Training calendar

Continuing Education Units (CEU) for Water System Operators

Check www.oesac.com for new offerings approved for drinking water.

Oregon Association of Water Utilities (OAWU)

503-873-8353

Dec. 9-11	End-of-year Operator's Conference
Dec. 17	Source Water Protection Planning

Oregon APWA Training Program

541-994-3201

Dec. 2-5	Public Works Essentials
----------	-------------------------

Cross Connection/Backflow Courses

Backflow Management Inc. (B)
503-255-1619

Clackamas Community College (C)
503-675-6958 ext. 2388

Backflow Assembly Tester Course

Jan. 26-30	Portland (B)
------------	--------------

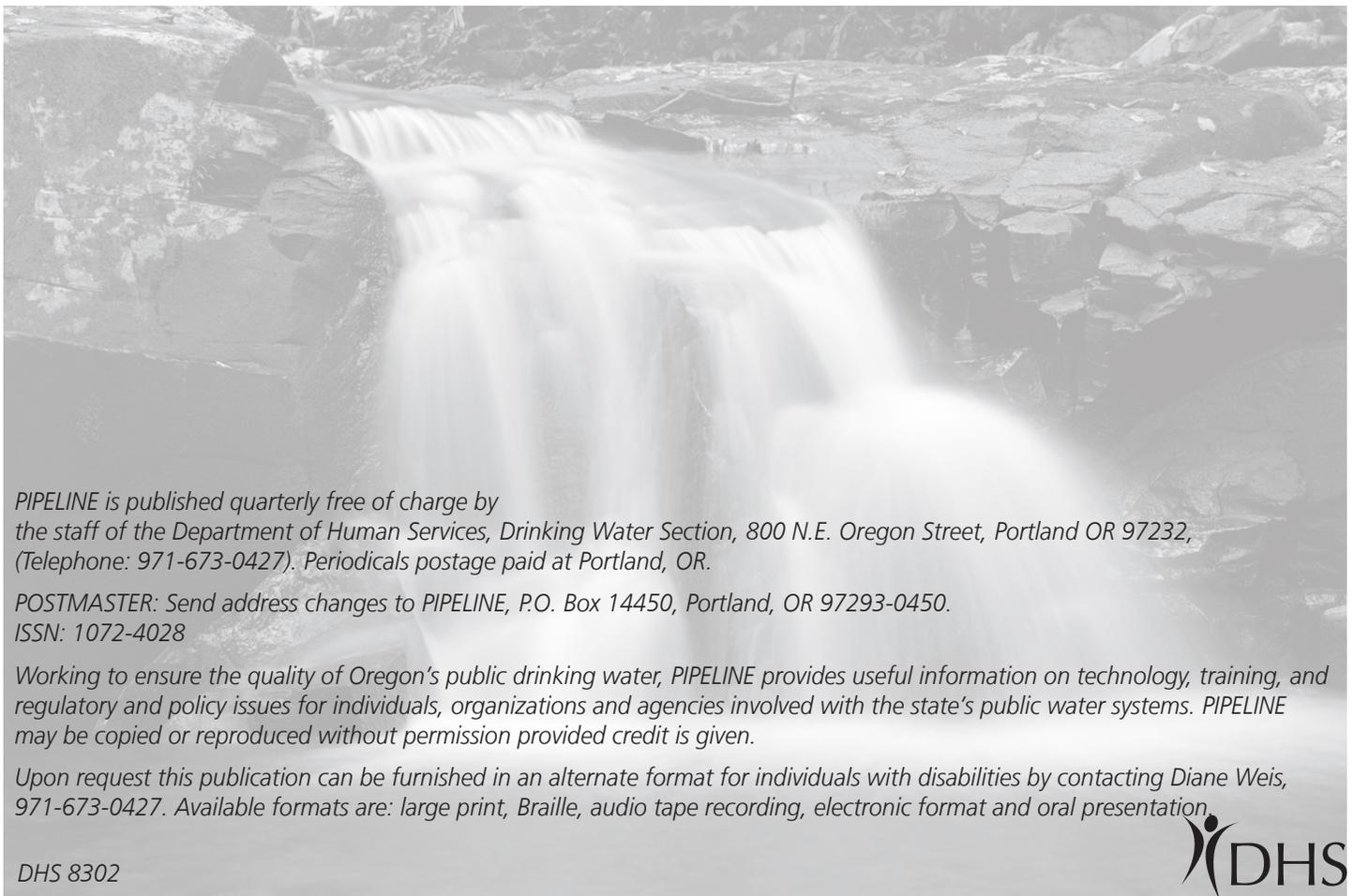
Backflow Assembly Tester Recertification

Dec. 4	Portland (B)
Dec. 5	Clackamas (C)
Dec. 11	Portland (B)

Cross Connection Inspector Recertification

Dec. 9	Portland (B)
Dec. 15	Portland (B)

Department of Human Services
Drinking Water Program
P.O. Box 14450
Portland, OR 97293-0450



PIPELINE is published quarterly free of charge by the staff of the Department of Human Services, Drinking Water Section, 800 N.E. Oregon Street, Portland OR 97232, (Telephone: 971-673-0427). Periodicals postage paid at Portland, OR.

*POSTMASTER: Send address changes to PIPELINE, P.O. Box 14450, Portland, OR 97293-0450.
ISSN: 1072-4028*

Working to ensure the quality of Oregon's public drinking water, PIPELINE provides useful information on technology, training, and regulatory and policy issues for individuals, organizations and agencies involved with the state's public water systems. PIPELINE may be copied or reproduced without permission provided credit is given.

Upon request this publication can be furnished in an alternate format for individuals with disabilities by contacting Diane Weis, 971-673-0427. Available formats are: large print, Braille, audio tape recording, electronic format and oral presentation.