

Pipeline

Program update

by Dave Leland

2009 has been a swirl of activity! Oregon applied for and received additional moneys for the Drinking Water Revolving Fund under federal stimulus provisions, which will enable us to begin awarding funds to communities for safe drinking water construction projects. We completed state adoption of three remaining EPA drinking water regulations. And, to top it off, the Legislature is deliberating, among other issues this session, state budget concerns as well as water-related bills.

Stimulus funds awarded

The 2009 federal American Recovery and Reinvestment Act (ARRA) included \$2 billion for safe drinking water infrastructure to be distributed

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OAWU to deliver small water system operator training

by Ronald Hall

The Drinking Water Program is happy to announce that we have contracted with the Oregon Association of Water Utilities (OAWU) for the delivery of our Small Water System Training Course. The course is free and is sponsored by a grant from the U.S. EPA. This is the same course that Drinking Water Program staff members have been delivering around the state for a number of years.

All water system operators are welcome to attend; however, the course targets small systems with fewer than 150 connections that use groundwater as a source or purchase water without adding any treatment. It is the course you need to take to receive small water system operator certification. Training materials have been updated to reflect industry standards and are based on a need-to-know document developed by an industry task force.

The courses will be offered in the same areas as in the past, but we want to limit attendance to 40

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through the states via the Drinking Water Revolving Loan Fund. Oregon's share is \$28,515,000, which compares to the current annual capitalization grant of about \$12 million per year. This stimulus funding is subject to the following:

1. All drinking water infrastructure projects must be under contract or under construction by Feb. 17, 2010. "Readiness to proceed" is crucial!
2. Fifty percent of the funding must be used for loan subsidies.
3. Twenty percent of the funding must be used for "green" projects.
4. "Buy American" provisions for materials are part of the ARRA.
5. Prevailing wages are required in compliance with Davis-Bacon.

Together with our partners at the Oregon Economic and Community Development Department (OECDD), we prepared early to receive stimulus funding. Communities across Oregon responded to our solicitation for safe drinking water projects. Nearly 150 communities submitted projects with a total estimated cost of \$335 million! More than 100 of these communities submitted financial applications and certified their readiness to proceed. We received the federal capitalization grant on April 9, and the staffs of DHS and OECDD are focused on reviewing the applications and conducting required on-site assessments of technical/financial/managerial capacity as top priorities. We expect to begin awarding funds by mid-June.

EPA rules adopted

We held hearings around the state in March for public comment on our adoption of the three remaining EPA drinking water regulations: the Long-term 2 Enhanced Surface Water Treatment Rule; the Stage 2 Disinfection By-products Rule; and the Ground Water Rule. The rule adoption was a major effort by Drinking Water Program staff,

and we appreciate the comments we received from the three participating water suppliers and from EPA Region X. The state rules were filed with the Secretary of State on May 15. Our next step is to apply to EPA for primacy for these three rules, and we expect to complete that process and take over rule implementation from EPA by fall 2009!

2009 Legislature in session

In a typical legislative session, about 3,000 bills are introduced. The Public Health Division usually reviews about 600 of these, and then tracks about 50 as top priority bills. This year, the Drinking Water Program is involved with top priority bills on the following topics:

1. Pharmaceutical take-back programs to keep unused drugs out of the water (SB 598);
2. Arsenic testing requirements for private wells upon sale of property (SB 739);
3. DEQ capacity to test water for cyanotoxins from algae (HB 2945).

Other bills in play include: establishment of drinking water overlay zones (SB 482); mobile home park submetering (SB 929); other bills related to pharmaceuticals (HB 2918, HB 2535); landlord water utility charges (HB 2613); continuing education units for water and wastewater training (HB 3247); municipal water use reduction (HB 3442); limited license for backflow testers to repair backflow devices (SB 930); and fluoridation of large water systems (HB 3156).

The state budget picture occupies center stage. The May revenue forecast is expected to show a shortfall for the 2009–11 state General Fund budget of more than \$4 billion. In April, all state agencies submitted General Fund budget reduction options of up to 30 percent. The Joint Committee on Ways and Means then held a series of public hearings in different communities in Oregon to take public comments on the agency-proposed reduction lists. The Drinking Water Program currently is funded at \$15 million for two years, with about one-third in General Fund moneys

and fees, and about two-thirds in Federal Funds. The DHS reduction options list contains a drinking water General Fund reduction of \$800,000 for 2009–11. This reduction option represents a portion of the program capacity that was added by the 2007 Legislature. Should this occur, the program will not be able effectively to oversee the 900 known very small non-EPA public water systems in Oregon, serving 10–24 people or 4–14 connections.

Stay tuned!

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OAWU ...continued from page 1

persons to improve the quality of the training. We have added additional courses this year in areas where prior attendance shows a greater need.

We will soon offer this same training online so check our Web site or future issues of Pipeline for announcements.

While we will continue to post the training schedule on our Web site, registration will be handled directly by the OAWU. You can reach them at www.OAWU.net or call them at 503-873-8353.

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Get ready for the Ground Water Rule

by Bill Goss

The Drinking Water Program (DWP) will take primacy for the Ground Water Rule (GWR) after the current rule adoption package is complete. The DWP has long advised that public water systems take many of the actions included in the GWR, but taking those actions will soon become required. Provisions of the GWR take effect **Dec. 1, 2009**. Are you ready?

Which water systems does the GWR apply to?

- Systems relying 100 percent on ground water (GW);
- Consecutive (or purchasing) systems receiving GW from wholesalers;
- Mixed surface and GW systems, except where all GW goes through treatment equivalent to surface water or ground water under the direct influence of surface water.

What does the GWR consist of?

The GWR is designed to reduce the risk of illness caused by microbial contamination in public GW systems. *E. coli* will be used as an indicator of fecal contamination. The GWR consists of four main elements:

- 1. Water system (sanitary) surveys.** The DWP has been conducting water system surveys for many years, but the GWR will affect the process. The survey frequency for community systems will change from every five years to every three years except for those GW systems that demonstrate outstanding performance. Significant deficiencies identified during the survey will need to be corrected within 120 days of notification, or be on an approved plan and schedule for correction.
- 2. Source water monitoring.** Source water samples will need to be collected from raw water sample taps at the wellhead or springbox in three possible scenarios:

Provisions of the GWR take effect Dec. 1, 2009

- **Triggered monitoring.** Following a total coliform positive (TC+) sample result in the distribution system, the GW system must collect one untreated source sample within 24 hours from every source in use at the time the TC+ sample was collected. For systems with <1,000 population, the triggered source sample(s) will count as one of the four repeat samples required under the Total Coliform Rule. Representative sampling may be allowed for larger systems with multiple GW sources and distribution system pressure zones if DWP approves the system's sampling plan.
 - **Additional monitoring.** After an *E. coli*-positive result from the source, five additional source samples must be collected within 24 hours unless corrective action is taken immediately.
 - **Assessment monitoring.** Twelve monthly source samples will be required for GW sources that are determined by the DWP to be at higher risk of fecal contamination. Systems will be notified individually if assessment monitoring will be required. All systems that treat with chlorine or ultraviolet and do not achieve 4-log treatment of viruses will be required to collect at least one source sample per year.
- 3. Compliance monitoring.** If a GW system provides 4-log treatment (99.99 percent inactivation or removal) of viruses, compliance monitoring of the treatment process can replace the triggered source water monitoring requirements if the system desires. If chlorinating, the chlorine residual will need to be monitored daily, or continuously if >3,300 population, at the entry point to ensure the minimum required chlorine residual is maintained. If a system decides to perform



compliance monitoring instead of triggered source monitoring, a request must be submitted to DWP by Dec. 1, 2009, with engineering calculations that demonstrate 4-log virus treatment before the first user. A minimum chlorine residual that must be maintained at the entry point will be assigned by DWP.

4. Corrective actions. A GW system will be required to take corrective actions if a source water sample tests positive for *E. coli*, or if the system is notified of a significant deficiency. The action must be agreed upon during consultation with DWP staff, and be one or more of the following to:

- Correct all significant deficiencies;
- Provide an alternative source of water;
- Eliminate the source of contamination;
- Provide 4-log treatment of viruses and conduct compliance monitoring.

What else do I need to know?

- An *E. coli*-positive source sample will require issuing a Tier 1 (Boil Water) Notice within 24 hours.
- EPA GWR guidance manuals and Quick Reference Guides are available online at: www.epa.gov/ogwdw/disinfection/gwr/compliancehelp.html.

What should I do now?

- Update your coliform sampling plan to include the required triggered source water sample sites. Identify which source or sources contribute water to the location of each coliform sampling site in the distribution system. A revised template for small GW systems is available on the DWP Web site.
- Install or confirm the presence of a raw water sample tap at each GW source. Source samples for springs may be collected from the overflow pipe outlet if it flows year-round; otherwise a sampling point will need to be installed as close as possible to the source, and prior to any treatment.
- Correct all deficiencies noted in your most recent survey report.
- Consider the pros/cons of triggered monitoring vs. compliance monitoring.
- Consider installing an injection port on the well discharge line so a chlorination system could be placed into operation quickly if needed. Determine if the system is able to provide 4-log treatment for viruses. Review the emergency disinfection and public notice procedures in your Emergency Response Plan.
- Consider wholesale/purchasing GW system communication and sampling requirements if they apply to your system. If a purchasing system has a TC+ sample, the wholesale GW system is required to collect the triggered source sample(s). Distribution of any required public notices to customers will also need to be coordinated.

The job of complying with the GWR will vary from system to system. Find out what it will take for your system and get ready!

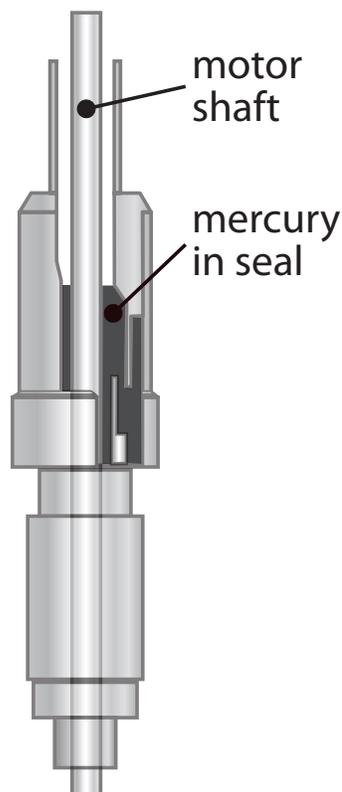
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Mercury in pumps: Addressing the risk of contamination

by Carrie Gentry

Several water systems around the nation have experienced mercury leaks at wells from the failure of seals in submersible pumps resulting in increased sampling, cleanup costs, the need to switch to emergency water sources, and in some cases, installation of treatment systems.

Submersible pumps are widely used at water systems in Oregon for pulling water from wells. In a submersible pump, the pump assembly and motor are submerged in water and the motor is typically mounted below the pump assembly. All submersible pumps use a seal to separate the electrical parts of the motor from the water intake area of the pump. Mechanical seals are common; however, some older pumps use mercury seals. At least one pump manufacturer (Flowserv Byron Jackson) still produces submersible pumps with optional mercury seals.¹



Mercury is a liquid metal and has a high surface tension, which makes it a tempting choice for use in submersible pump seals. A submersible pump with a mercury seal may contain approximately 12 pounds of mercury, which is about 5,400,000 milligrams.² The maximum contaminant level (MCL) for mercury is 0.002 mg/L.

A mercury spill on the ground at a wellhead — which could happen when a pump is being pulled for maintenance — could release mercury vapor. Health effects associated with inhalation of mercury vapor over time include tremors, insomnia and neuromuscular changes.³ Cleanup costs of surrounding soils can be significant.

The financial impacts on a water system due to a leak of mercury in a well also can be significant. This might include the cost of removing the mercury from the well, which may be found in both the water and the sediment at the bottom of the well.

It may also include the cost of supplying an alternative source of water, and increased monitoring and testing costs.

In order to mitigate the risk of mercury leaks from submersible pumps, operators should develop and implement best management practices.^{2,4} These may include:

- 1. Awareness of mercury seals.** If a submersible pump was installed prior to 1990, it may contain a mercury seal. Operators should check the pump manual or contact the manufacturer to determine whether the submersible pump has a mercury seal. If the operator is unable to make a determination, then the assumption should be made that the pump has a mercury seal.
- 2. Replace seals or pumps.** Some seals can be retrofitted with mechanical seals. If a seal cannot be replaced, consider putting pump replacement projects higher on the priority list.

- 3. Consider more frequent monitoring of mercury.** If pump replacement is not a feasible option, consider increased monitoring of mercury.
- 4. Read instructions before pulling a pump for maintenance.** Incorrectly disassembling a pump can lead to a leak. An operations manual should have instructions for proper pump disassembly and removal.
- 5. Use a cover or other barrier if working over the wellhead.** An impermeable barrier can protect the soil around the wellhead and the wellhead itself.
- 6. Have a spill kit handy.** Train staff on safe cleanup procedures for mercury spills and safe disposal. DEQ has disposal guidelines for mercury. See www.deq.state.or.us/lq/mercurydisposal.htm for more information.

We recommend that water systems determine whether any submersible pumps currently in use contain mercury seals. If mercury seals do exist in your water system, then best

management practices can help reduce the risk of contamination. Over the long term, phasing out mercury seals by replacing the seals or pumps is highly recommended.

Carrie Gentry is the regional engineer assistant in the Technical Services Unit of the Drinking Water Program 971-673-0191 or carrie.l.gentry@state.or.us

1. Hawaii Safe Drinking Water Branch of the Hawaii State Department of Health, September 2006. Mercury In Your Water Source. The Water Spot 2006. <http://hawaii.gov/health/environmental/water/sdwb/environmental/water/sdwb/ newsletter/pdf/10spot07.pdf> (accessed 4/2/2009).
2. Massachusetts Department of Environmental Protection Drinking Water Program, December 2007. Identification and Best Management Practices of Mercury-Containing Equipment at Public Water Systems. www.mass.gov/depl/water/drinking/mercbmp.pdf (accessed 4/2/2009).
3. U.S. Environmental Protection Agency, February 2009. Health Effects. www.epa.gov/mercury/effects.htm (accessed 4/2/2009).
4. Idaho Department of Environmental Quality. Drinking water, submersible pumps, and mercury seals: A potential problem. www.deq.idaho.gov/WATER/assist_business/pws/mercury_seals_fs.pdf (accessed 4/2/2009).



Renewing backflow tester and specialist certifications for 2009–11

by Michael Perry

It is time for the backflow assembly testers and cross connection specialists biennial certification renewal. The renewal is for July 1, 2009, through June 30, 2011. Applications were mailed April 27, 2009. If you have not received your renewal application, call 971-673-1220. Renewal forms are *not* available online.

Most renewals will require evidence of having taken the approved Tester or Specialist Update courses along with gauge calibrations. Renewal requirements are on the back of the renewal form or online at:

www.oregon.gov/DHS/ph/crossconnection/docs/RenewalRequirements.pdf.

If testers want to be on the Public List of Certified Testers, in addition to the renewal requirements of certification, the tester, or his or her employer, must have either a Construction Contractors Board license or a Landscaper Contractors Board license.

Michael Perry is the Cross Connection Program coordinator 971-673-1220 or michael.perry@state.or.us

Attention Lane County public water systems

The DHS Drinking Water Program (DWP) is pleased to announce that after 10 years of direct state service to public water systems (PWS) in Lane County, Lane County Environmental Health has contracted with the DWP to provide local service again! This means that more than 300 PWS in Lane County will now receive assistance from the Lane County Environmental Health Program beginning in March 2009. For assistance, please see the information below:

For PWS serving > 3,300 population and all community PWS using surface water in Lane County contact:

Casey Lyon
DHS Drinking Water Program
444 A Street
Springfield, OR 97477
541-726-2587, ext. 31
Fax: 541-726-2596
casey.lyon@state.or.us

For all other Lane County PWS contact:

Katrinka Danielson
Lane County Environmental Health
125 E. 8th Avenue
Eugene, OR 97401
541-682-7462
Fax: 541-682-7459
katrinka.danielson@co.lane.or.us

Operator certification corner:

Applying for small water system operator certification

by Dottie Reynolds

This is a reminder that if your system is required to have a level "S" ("small system") operator, the small water system operator **and** the owner must complete the small water system (SWS) operator designation application. This form designates the operator as the individual in direct responsible charge (DRC) of the system. The training certificate received for attending the training course is *not* the SWS operator certification. The SWS is not considered to be in compliance until the SWS operator application is received and certification is issued. Re-certification is due no later than July 31, every three years.

The owner or legal representative (president, owner, secretary, superintendent, mayor, etc.) of the system must complete the application designating the operator as the DRC for the



drinking water system, and send it, along with a copy of the operator's training certificate, to the address at the bottom of the form. The only time the designated DRC may sign the application is if he or she owns the system. If you cannot locate the training certificate, indicate the training date and location on the application and we will verify the date.

You may request a small water system operator application by calling the Department of Human Services Public Health Division Drinking Water Program (DWP) at 971-673-0413 or you can print the form from the Operator Certification Program Web site at www.oregon.gov/DHS/ph/dwp/certif.shtml. The Web site also offers training schedules, rules, requirements, contracting for services information, FAQ sheets, and more, about small water systems. To ensure that the address, phone number and contacts are correct, click on the side bar ("Data Online") and type in the name of your system, or its PWS ID number. If the information is incorrect or there are any changes to be made on this screen, please call the DWP immediately.

If your DRC is a contract operator certified at level 1-4 in distribution or treatment, this application still must be completed and signed by the owner every three years. The DWP must also have a copy of the most current contract. This ensures that we have the most current owner (legal representative) and operator information on record.

Note that the SWO free training course, formerly offered by Drinking Water Program staff is now being conducted by the Oregon Association of Water Utilities (OAWU) personnel. Look for information on our Web page, this Pipeline issue, or go to www.OAWU.net for the full calendar and locations of training.

Dottie Reynolds is the Operator Certification Program coordinator in the Drinking Water Program 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

July 15, 2009
October 21, 2009

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

Cross Connection Advisory Board

Go to:
[www.oregon.gov/DHS/ph/crossconnection/
docs/AdvisoryBoardSchedule.pdf](http://www.oregon.gov/DHS/ph/crossconnection/docs/AdvisoryBoardSchedule.pdf)

Training calendar

CEUs for Water System Operators

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

OAWU

503-873-8353

June 10	Source Water Protection Planning
June 17	Safe Drinking Water Act Update
June 17	Water Conservation Management Planning
July 15	Safe Drinking Water Act Update
July 15	Water Conservation Management Planning
Aug. 4	Control Valves by GC Systems
Aug. 17–20	Summer Classic XV
Sept. 8–10	Water Treatment/Distribution Certification Review
Sept. 22–24	Water Treatment/Distribution Certification Review

OCT Academy

1-866-266-0028

June 22–23	Two-Day Pump Theory
June 24–25	Two-Day Pump Repair and Maintenance
June 26	One-Day Pump Control Systems
Sept. 15	Ponds and Lagoons
Sept. 18	Collections Certification Review
Sept. 21–22	Two-Day Mathematics for Collections Operators

Cross Connection/Backflow Courses

Backflow Management Inc. (B)

503-255-1619

Clackamas Community College (C)

503-675-6958 ext. 2388

Backflow Assembly Tester Course

June 1–5 Portland (B)

June 8–12 Clackamas (C)

Aug.31–Sept.4 Portland (B)

Backflow Assembly Tester Recertification

June 5 Clackamas (C)

June 12 Portland (B)

June 18 Portland (B)

June 23 Redmond (B)

June 26 Portland (B)

Cross Connection Inspector Course

Sept.28–Oct.1 Portland (B)

Water System Training Course

OAWU

503-873-8353

June 23 Coos Bay

June 25 Springfield

July 22 Pendleton

September * Newport, Klamath Falls,
Bend, Eagle Point

* Dates to be announced

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