

# H<sub>2</sub>Oregon

Winter 2011  
Vol. 33, No. 1

*OAWU's 33rd Annual  
Management & Technical  
Conference and Exhibitor Event*

*February 28-March 4, 2011*

*Sunriver, Oregon*

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*Details on pages 3 & 4 inside*

*A publication of Oregon Association of Water Utilities*



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Winter 2011  
Vol. 33, No. 1

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*Mt. Thielsen, Oregon*

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*OAWU's mission is to provide service, support and solutions for Oregon water & wastewater utilities to meet the challenges of today & tomorrow.*

Oregon Association of Water Utilities



# New Business Office

*by Jason Green, Executive Director*

On behalf of the OAWU Board of Directors, it is with great pleasure that we announce the purchase of an office for your association! This "Goal" within OAWU's Long Range Plan, as initially prepared by the Board of Directors back in June 2000, and was officially adopted by the Board on September 15, 2000. It is now, after over ten years of planning and searching for a location and facility that will meet the association's needs, that we excitedly open these doors to serve our membership!

Your association's planning and eventual acquiring of a new facility is a landmark in OAWU's history of service to members and to all water and wastewater systems in Oregon. This 3,200 square foot business office, with adjoining large shop will provide much needed space for growth that has occurred over the years and prepare your association to expand upon this valuable service in the future. The business office, attached shop design and location was as if OAWU was in mind during design and the recent complete remodel of the building. The future may hold completion of a formal training classroom with an area for a hands-on training facility added to the training format!

The official signing for the new office and property of the Oregon Association of Water Utilities' was on Friday, November 19, 2010 and the move began the following week. OAWU Staff have since been unpacking, settling in and thoroughly enjoying our new home!

The physical and mailing address of the new office is:

**OAWU  
935 N. Main Street  
Independence, OR 97351**

Please update address files and also note the new office phone number (503) 837-1212; fax number is (503) 837-1213. The web address, [www.oawu.net](http://www.oawu.net) and all emails for staff remain unchanged.

Further details will be provided by email and on the OAWU web page in the near future. We are also planning an official "open house celebration" but would very much welcome you stopping by anytime! Normal business office hours are Monday through Friday, 8:00 AM to 5:00 PM.

With greatest gratitude for your continued support – THANK YOU FOR MAKING THIS POSSIBLE! 💧

*Sincerely, Team OAWU!*



# We've Moved

*by Russ Cooper, OAWU President*

It is a real privilege to share with you that... WE HAVE MOVED. This November, OAWU moved into their newly purchased office. The move comes as a result of Long Range Planning, a favorable real estate market, a commitment to set aside funds over the past seven years, and staff's hard work. Most importantly, it has been your continued support of this great association that makes this move a reality.

After 10 years of planning and looking for just the right property, OAWU landed in Independence, Oregon about 20 miles west of the Salem. The one acre property has a nicely appointed 3200 square foot office building with an attached 4,800 square foot unfinished warehouse. “The business office, attached shop design and location was as if

OAWU was in mind during design and the recent complete remodel of the building,” stated Jason Green, OAWU Executive Director, about the new facility. The new location is going to allow for continued growth and provide for future opportunities to develop an on-site training facility.

One of the noticeable results of this move is, from both the staff and the membership, a new found sense of “this is home.” You can be proud that the new building is yours. Over the past week, I have had an opportunity to listen to a number of members, who have stopped by the new office, say “this is really nice.” With that said, I remind you that you are welcome anytime, and truly encourage you to stop by to take a look.



I will wrap up with this thought - I see this as one more landmark on the horizon of this association as we are moving forward to "provide service, support, and solutions for Oregon water and wastewater utilities to meet the challenges of today and tomorrow." There are other landmarks awaiting us.... what will they be? What is the next landmark that will improve the service and support we provide you?

From the Board of Directors, thank you for your continued support of OAWU, our field staff, services, and training opportunities. It is a real privilege to serve you. 💧

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# Emergency Response

by Heath Cokeley, Circuit Rider

This is the time of year that my thoughts turn to the topic of emergency response planning and preparedness. Just this morning I saw a news report about a broken mainline in Portland. According to the news, a truck hit a fire hydrant and caused an 8 inch mainline to rupture a few blocks away. I was a bit surprised that something so routine made the news but what surprised me more was how Portland Water Bureau notifies its customers. The news report stated that not only do they utilize the local media but there was information posted online via Twitter and Facebook. My initial reaction was that this would never work because there are too many people like me out there who have heard of Twitter and Facebook but don't use them regularly.

The use of this newer technology can be an asset in getting the word out to our customers and can be a valuable tool when used in conjunction with the Public Notification regulations outlined in OAR chapter 333-061-0042. Does your Emergency Response Plan outline how you will accomplish public notification in the event of an emergency?

We are fortunate to live in a state where large-scale regional emergencies are few and far between. Does that mean that our ERP does not need to be up-to-date? The answer to that question is pretty obvious. If it's sitting on the shelf collecting dust and has been untouched since 2005, you're not doing your job as a servant of the public who has entrusted you with the responsibility of safeguarding their drinking water. Your

ERP should be reviewed at least annually and redrafted every 5 years. A well drafted ERP can be used on a regular basis, therefore it will be updated continually. Your ERP should be based on the framework of the Incident Command System which is very useful in reducing confusion in any situation from a major disaster to your town's Independence Day celebration.

We, as Circuit Riders, are frequently asked how precise and detailed an ERP needs to be. An ERP is not designed to be a document that has the short answer to every scenario that may be encountered. I believe that one of the most important aspects of an ERP is to make sure to leave room for your well-trained operators to make judgment calls depending on the intricacies of the situation as they see it. No two scenarios will be the same and no scenario will be just like anything you find in a textbook. Operators need the ability to call 'em as they see 'em and develop a plan of operations based on the specific circumstances of each event.

There are many more aspects of an Emergency Response Plan than I can list in a one-page magazine article. We here at OAWU would welcome the opportunity to assist you drafting, redrafting, or evaluating an Emergency Response Plan and we stand ready to come and help out in the event of an emergency.

For more information on ERPs, refer to FEMA, EPA, and as always, OAWU. ♦



## OPERATORS OF THE YEAR

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**For more information and form, see page 27.**

## SYSTEM MEMBER SCHOLARSHIPS

*Two student scholarships are available to the Annual Management and Technical Conference in Sunriver. Nominate a deserving student!*

**For more information and form, see page 26.**

*or visit* **[www.oawu.com](http://www.oawu.com)**



# An Ounce of Caution

by Scott Berry, *Circuit Rider/Programs Manager*

There have been some questions lately about the importance of technique in obtaining bacteriological samples. A few things to remember; a high percentage of positive coliform samples are the result of poor sampling technique or poor sample site.

Even if the above statistic was not the case, would you want to risk the public relations hit, cost of public notification and loss of consumer confidence for a Boil Water notice when there was nothing wrong with the water?

An upset in process, improperly treated, or unprotected water may contain microorganisms that are capable of producing disease. Testing for specific pathogenic microorganisms, such as typhoid, dysentery, cryptosporidiosis, or giardiasis is very time consuming and requires special techniques and equipment. Rather than testing for specific pathogens, water is generally tested for the presence of indicator organisms, the coliform group of bacteria.

Coliform bacteria can be divided into two groups, fecal and non-fecal. Fecal coliform bacteria occur normally in the intestines of warm-blooded animals. Fecal coliform can grow at 45 degrees Celsius versus non-fecal (total) which grow at 35 degrees Celsius.

Oregon Administrative Rules chapter 333-061-0036 stipulates the number of samples to be taken based on the population served and the maximum contaminate levels.

The regulations will give you some guidance as to how and where to sample. Whether or not you choose to use a torch to flame the sample site is left up to you. My personal

preference when obtaining a sample from a designated sample tap is to hit as much of the surface as I can with direct flame. If the brass starts to turn color, you're over heating it.

There are guidance documents on the Drinking Water Program website that will help you choose your method of sampling. The following is an editorialized and abridged sample of that document.

## PROPER MICROBIOLOGICAL SAMPLING TECHNIQUES

Carefully follow these steps in taking a sample for bacteriological testing:

1. Select the sampling point. The sampling point must be a faucet from which water is commonly taken for public use.
  - The sampling point should be a non-swivel faucet. I prefer it not be in the bathroom.
  - Remove any aerator or screen and flush. I never use a torch when obtaining a sample from a customer service.
  - Don't use a leaking faucet.
  - When using an outside faucet, disconnect any hoses or other appurtenances and flush thoroughly.
  - Do not use fire hydrants or frost-free hydrants.
2. Use only sample bottles provided by the lab for bacti sampling. Fill them to the appropriate level. Do not rinse them out. Always keep several bottles on hand but keep them in the correct

## MAKE A NOTE! NRWA Events

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H2OXPO

Washington, DC  
Louisville, KY

February 6-9, 2011  
October 4-6, 2011

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Nashville, TN

February 5-8, 2012  
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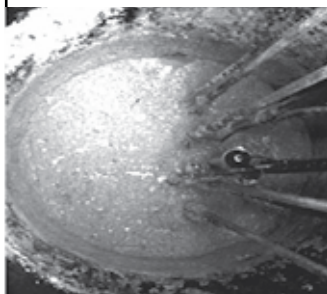


- rotation so that you don't have bottles sitting around too long.
3. Don't open the bottle until the moment of filling.
  4. Flush the line for three to five minutes. Measure the free chlorine residual and record the residual on the lab form.
  5. Reduce the flow to a steady stream.
  6. Remove the seal and uncap the bottle. Hold the bottle near the base and be sure not to put your fingers inside the bottle or the lid. Don't set the lid down.
  7. Gently fill the bottle to the appropriate level.
  8. Replace the cap immediately. If you drop the lid or think you may have contaminated the sample, do not use it. Use another bottle and collect a new sample.
  9. Label the sample. Completely fill out the form provided by the lab. The information must include:
    - Public water system ID number.
    - Date and time sampled. The sample must reach the lab within 30 hours of the time the sample was collected.
    - Sample location. You may need to deviate from the site specified in your sampling plan. This is allowable but always note the correct site on the form.
    - Name of person collecting the sample.
    - The sample type: routine, repeat, or special.
      - i. Routine: Samples collected on a regular basis to monitor for contamination.
      - ii. Repeat: Samples collected following a "Present" (positive) routine sample. Check the OAR's for the required number of repeat samples to be collected.
      - iii. Special: Sample collected for other reasons.
  10. Package the sample for delivery to the lab. Be sure to include the lab form. The samples should be kept cool at all times.
  11. Mail or deliver the sample to the lab immediately.

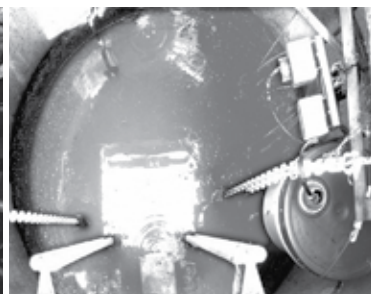
When it comes to the collection of samples and the likelihood of improper technique causing a negative reaction to a positive sample, my motto is: An ounce of caution is worth a pound of cure. 💧

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# Do I Have the Authority To

by Mike Collier, Sourcewater Specialist

## *Are you a person of character?*

Does this mean that you believe you have character; or that others think you have character?

Do you even care?

What is character?

Let's start by defining character: dictionary.com defines it as the aggregation of features and traits that form the individual nature of some person or thing; moral or ethical quality; or qualities of honesty, courage, integrity or the like. For this definition, it is important to acknowledge a common unchanging standard of right and wrong. Some may chalk this moral or ethical standard up to societal development throughout time. I accredit it to God, but either way there is a common standard that remains. In other words stealing and the like are wrong and this is something that is agreed upon independent of time or geographical location (I know that there is room for debate, such as if it is ok when a life is at stake, but let us not confuse the focus of this article). Someone who does not believe in a common standard is probably trying to excuse their own actions; I am confident that they would not feel it is justified if they were the ones lied to or cheated. *Next Generation Leader* by Andy Stanley gives another definition of good character: to do what is right because it is the right thing to do (this is nonnegotiable) regardless of the cost. This is not fearing the consequences of doing wrong and therefore doing right, but doing right simply because it is right.

To better define character we must explore possible features and traits which comprise someone's character. According to the book *Making Ethical Decisions*, by Michael S. Josephson, there are six pillars that make up character: trustworthiness, respect, responsibility, fairness, caring, and citizenship.

To use this as a working definition for character we must define each pillar.

- Trustworthiness is to be honest, not deceive, cheat, or steal, be reliable, be men and women of your word, have the fortitude to do the right thing and loyalty.
- Respect includes treating others with respect (follow the Golden Rule), be tolerant and accepting of differences, use good

manners, do not be crass, be considerate of the feelings of others, don't threaten, hit or hurt anyone, deal peacefully with anger, insults and disagreements.

- Responsibility is to do what you are supposed to do, plan ahead, persevere, always do your best, use self-control, be self-disciplined, consider the consequences, be accountable for your words, actions, and attitudes and set a good example for others.
- Fairness includes playing by the rules, take turns and share, listen to others, don't take advantage of others, don't blame others carelessly and treat all people fairly.
- Caring is to be kind, compassionate, express gratitude, forgive others and help people in need.
- Citizenship is to do your share to make your community better, cooperate, get involved in community affairs, stay informed, be a good neighbor, obey laws and rules, respect authority, protect the environment and to volunteer.

Now that we have a simple, working definition of character we can further pursue how character is built. Character begins to be developed in children through family interaction; it is both taught to and witnessed by the children. As children grow they begin to build character for themselves from the people they admire, people they spend time with, reactions they observe, expectations, friends, life experiences, stories they hear, books they read, music they hear, and shows they see. Character can and should continue to be built and developed over time. Think back to when you were in high school or when you were in your twenties, did you get into trouble, did you sneak around behind your parents' backs, and did you lie or steal? What about now? Do these actions now anger you when seen in someone else? What changed?

Often times when young we care what others think about us, specifically our friends and others around our age. During this life stage we try to test the limits and see what we are capable of. When maturing we begin to reflect within (this is usually spurred on by troubles, age, personal relationships, or God) and begin to take an account of who we are and who



# Write This Article?

we want to be. We then may choose to try to change our character.

Changing character will take deliberate time and action; good character does not develop by itself, you must take the time to read and think about what character is and how you can better develop the appropriate attributes. This will involve taking extra time when making decisions to ask yourself what you would like to do in the situation, what the right thing to do is, and then choosing to go with what is right. Another way to build character is to define what is right for different situations and then begin to live this out. Start by remembering the six pillars of good character and build them in your life.

It is important to realize that character is not reputation. Reputation is what others think of you. They could be wrong. Reputations leave room for the best people to be thought of as bad and the worst people to be thought of as good. Character is who you are regardless of what others think or say about you. Character is who we really are. It is what we do when no one is looking. It is the accumulation of thoughts, values, words and actions; these become the habits that form our character. This character will be the path that you follow and will define you as a person.

The things we do in private, not in the public eye, show character. Do you do the right thing when it is easier, financially better, or it may feel better to do the wrong thing? Do you do the right thing when it could hurt your career? Let's take this to an extreme example to make the point. Your boss asks you to do something that you know is wrong, but if you are not compliant, you may ruin your chances to ever be promoted. What do you do? Let's push the example further, say your boss is Hitler and he has asked you to kill innocent people and you may be killed if you do not comply. Are you willing to make a stand for what you know is right?

It is difficult to make decisions against opportunity, emotion, intuition, economics, current trends, and common sense. Especially when doing so may negatively affect your reputation and possibly how far you can go in a company. But to value something above your personal ambition, something you will not sacrifice for success, gives greater value. You are not influenced by those that are just out for themselves

and you begin to be an influence on others. People will look to you to take a stand for what is right and this will begin to make you a moral authority and a leader. Good character is something that cannot and will not change between your private and professional life. If what you preach at work is different from what you do in private, it comes into question if you have good character at all. Are you walking your talk? Do your convictions, actions, beliefs, and behaviors line up?

Why is it important to consider one's character?

Without good character people only look out for their own interests, to have the most, be satisfied immediately, and be the best regardless of the cost. Daily, there are clips of how this may look; people who stomp on others in order to put one more dollar in the bank. However, this type of action does not improve the world we live in; just consider Bernie Madoff as an example. During his trial he stated that "as I engaged in my fraud, I knew what I was doing was wrong, indeed criminal. When I began the Ponzi scheme, I believed it would end shortly and I would be able to extricate myself and my clients from the scheme. However, this proved difficult, and ultimately impossible...." Power, money, success, and fame are a strong force and can push us to do wrong in order to maintain the lifestyle to which we have become accustomed. We persuade ourselves that it is for everyone else that we have gone against what we know is right, not for ourselves. Madoff ruined thousands of lives to better his own, but in the end he got caught. People of poor character need to consider what may happen if they are "caught;" will they be fired, lose a spouse or friend, or get arrested? Being of good character does not mean that you will have a great life and nothing will ever go wrong for you, but you will be confident that your actions are in the right; this is known as "being above reproach." Don't be a wimp, stand up for what is right.

The answer to the title of this article is I don't know, I may be a hypocrite, but at least I am willing to take a look and work on my character. Even Benjamin Franklin was not perfect in character; he had a tendency to overindulge in food, dress to impress, and was known for his poor treatment of women. However, this did not stop him from continuing to work on himself. In his Autobiography

he wrote about thirteen areas he was working on to build his character. I will now leave you with some famous quotes about character to help you understand good character, the importance of building it in your life, and how to possibly do so.

*Reputation is what men and women think of us; character is what God and angels know of us.*  
~Thomas Paine

*You cannot dream yourself into a character; you must hammer and forge yourself one.* ~Henry David Thoreau

*Sow an act, and you reap a habit; sow a habit, and you reap a character; sow a character, and you reap a destiny.* ~George Dana Boardman

*Our character is but the stamp on our souls of the free choices of good and evil we have made through life.* ~John C. Geikie

*The essential thing is not knowledge, but character.*  
~Joseph Le Conte

*It requires less character to discover the faults of others, than to tolerate them.* ~J. Petit Senn

*Talents are best nurtured in solitude. Character is best formed in the stormy billows of the world.*  
~Johann Wolfgang Von Goethe

*Let us not say, every man is the architect of his own fortune; but let us say, every man is the architect of his own character.* ~George Dana Boardman

*Character is doing the right thing when nobody's looking. There are too many people who think that the only thing that's right is to get by, and the only thing that's wrong is to get caught.* ~J.C. Watts

*It is easier to find a score of men wise enough to discover the truth than to find one intrepid enough, in the face of opposition, to stand up for it.* ~A.A. Hodge

*Character is like a tree and reputation like its shadow. The shadow is what we think of it; the tree is the real thing.* ~Abraham Lincoln

*Be more concerned with your character than your reputation, because your character is what you really are, while your reputation is merely what others think you are.* ~John Wooden

*To keep your character intact you cannot stoop to filthy acts. It makes it easier to stoop the next time.*  
~Katharine Hepburn 💧



# What Does *Passion* Mean

by Hans Schroeder, Circuit Rider

What does the word *passion* mean to you? The dictionary describes passion as any powerful or compelling emotion or feeling, as love or hate. It also describes it as a strong or extravagant fondness, enthusiasm, or desire for anything.

Do you have passion for things in your life? Your job? People in your life? Special places you have been or the place you grew up? There are many different connections to the word passion but I am focusing this article on just two described above. Since taking my job with OAWU,

I have had the pleasure of spending some real quality time with my grandparents, more affectionately known as Bampy and Granny. When I am in the Salem area I will spend the night with them or go out to dinner with them. We have some great conversations, something that I appreciate so much more in my adulthood. They have taught me many truths about life. In my evening visits that I have shared with them, I have witnessed not only passion in their marriage that they have shared for over 68 years (November of 2010), but also a passion for life.

In their mid 80s I see how well Bampy cares for Granny each and every day and what a desire and passion he has for life in general. He gets up and goes for a walk in the mall every day, has coffee with friends a few times a week and still drives his Dodge Charger around (the reason they have a Dodge Charger is Granny's passion to have a sports car for her last car purchase).

He talks with me about his one and only job he had after he came back from the war. When he describes it, there is always a smile on his face and you can tell how he truly enjoyed going to work every day. Bampy had a great passion for the job that he had and he took pride in the daily tasks that were asked of him. His lifelong employment passion was working at the Boise Cascade

paper mill in Salem, his entire working career. He loved that job and still meets with a few fellow employees for coffee every week.

Granny reflects back on her job she held for over 30 years working in an upholstery shop, she was and still is an accomplished seamstress. We as her family, still enjoy receiving the quilts, tea towels and pillow cases that she makes for all of us including her children, grandchildren and great grandchildren. I hear the passion in her stories of the people she worked for reupholstering their belongings. I am even fortunate enough to have one of her prized possessions, a feathertick red chaise lounge owned by the former movie star Jean Harlow.

This passion that I have come to see and hear about makes me wonder how do I treat other people, my job, my co-workers, my boss and also my wife and children? Do I have that pure enjoyment for my job? Do I show and reflect to others how grateful I am to have a job that I truly love? I think that our relationships at home reflect what kind of bosses and employees we are out in the work field. When we have a passion for things in life, others will be able to tell. How many years have you been married? Does your spouse still look at you like he or she did when you were dating? Has that passion and desire to make them happy been taken over by other things in your life and put to the side? If so, maybe you should re-evaluate the things that you could do to bring your job or marriage back to where it is no longer comfortable but where you are passionate. Are your children upstanding citizens? Do they have passion in their lives that you have instilled in them whether it is school, sports, animals, band, scouts, friends or just helping other people in general? If they are sitting on the couch always being a consumer and never being a producer maybe we should lead the way and show

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# To You?

them by example how to be passionate about something in life. Do co-workers look up to you? Are you passionate about your job or do you show up to work every day just to draw a paycheck? Do you “earn” the amount of money you are making or do we just come in and take up space and gossip about everyone we work with? If someone has been at their job awhile, why do they stay if they are truly not happy? Maybe they just need to look down deep and figure out the passion for the job that is missing. Does the boss truly believe you are a passionate person about life, especially your work? Do we come up with new incentives that can make the workplace a better place to work? We don't have to reinvent the wheel to find passion! Come up with a plan and make the rest of this year a very passionate one! ♦



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# Held Up, Held Down!

by Tim Tice, Projects Manager

Water rates take on many faces, yet the most obvious is the face of obscurity, lying in the shadows, not to be dealt with. This phenomenon is created from various factors, such as, if the rates were established in either a political climate or an economic climate. Fairness and equitability should be the main consideration regardless of economic or political status. If water was gasoline, could someone go to the station and fill up your tank as often as necessary for a simple monthly fee? Allowing the gas station to charge whatever they need to meet the consumer demands would have a price set at the ceiling, and only go up from there.

Water does not fit the same puzzle pieces as other commodities, yet life depends on it. Water systems, when it comes to ascertaining rates, should be operated like any other business. Looking at the cost of operations during the present and future plans is the straightforward approach. Review the expenditures each month, understand what was collected in revenue, and determine the difference and you're either money ahead or money behind.

What about those future capital improvements? Future capital improvements are an absolute necessity to determine the long term operating expenses and this is where the complexity begins.

Flash Bulletin: ABC Water System reported in today's courier that thirty percent of the distribution system is in need of repair. The community is up in arms over the decision to raise rates and "we can't afford it!" stated one member of the community.

Flash Bulletin 2: Water systems deteriorate over time!

How is it that so many of us do not realize this? Is it a matter of trust or anti-trust? Is it a belief; that is merely a circumstance of "out of sight, out of mind?"

Rates, whether set by a municipal body or an investor owned utility, need not be perfect, just fair and reasonable, to be upheld by the

courts. The cases, which address rate setting, show that there are a myriad of factors that may justify different rates among various classes of users. The historical cases reveal that only *unjust or unreasonable* differences will render a rate or charge objectionable.<sup>1</sup>

In showing that rates lack uniformity is by itself insufficient to establish that rates are unreasonable and consequently unlawful. Rates charged must bear some relationship to the present and future costs of providing water service. Be able to justify the increase, ensuring there is no discrimination. Communications in public relations is important.

There are many examples of good scenarios as to how rates are monitored and adjusted according to keeping the water system functioning properly. There are also many examples where no such rate increase has been made in ten plus years. There is a rude awakening forming out there in water land. Annual review of costs and revenues will give direction as to whether the water system is operating in the red or the black. Once delved into, the process can be a bit of a challenge, but as you look at the fundamentals of water rates, it should become quite clear if rates are sufficient. The cost of supplying potable water has increased over the years, but really never considered as a category much like electricity, natural gas, food, or television. Oh, by the way, television is not a life sustaining factor, unlike water. Ask yourself, has your cost for television viewing been raised?

If you're at a loss as to where to begin, you can contact our office as we would be glad to assist your system. Have a wonderful Christmas, a great New Year, and *the best that life has to offer!* ♦

<sup>1</sup>Manual of Water Supply Practices M1, Fifth Edition, Principles of Water Rates, Fees, and Charges: American Water Works Association, copyright 2000.





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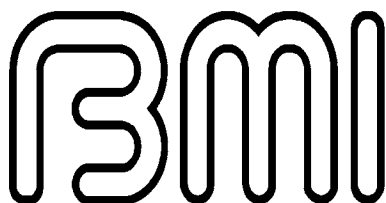
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# Source Water Protection:

*by Jack Hills, Source Water Specialist*

How many of us have started off on a family vacation or car trip that will take a long day or two to reach our destination, only to have that question thrown at us before we even cross town and get on the freeway? "Daddy, are we there yet?" Oh my! This could be a long drive.

I was taking my dog for a walk the other day (actually I believe he thinks it's his duty and responsibility to insist on walking his master for the benefits to us both). It was a rainy day walking through the developed residential areas of south Salem where the sidewalks, curbs and streets meander up and down hill to negotiate the terrain. I was wondering if I should have included an umbrella; no, not this Oregonian walking by myself, but was I not considering the soaking wet pooch? Just the day before, I saw someone who had dressed their little dog in a sweater while taking their walk. Maybe my dog could use a rain coat. After all, my daughter dresses him up in doll clothes fairly often and he seems to go along with it, even accepting the rides in the doll's stroller.

So walking down a long curvy stretch of roadway, I noticed that the water flowing alongside of me in the curb is moving faster than we are and that the stream is becoming wider the further down the hill we go. Well that makes sense, there is more and more water being collected off the impervious streets, accumulating in the gutter from the contributing area above us. I'm thinking a "mini watershed." Now who but a "source water guy" would be thinking like this while walking their dog in a rainstorm? Since this was not the first rain of the season, the streets had already been washed pretty clean. There was no appearance of an oil sheen, dirt and dust, or sediment being carried along with this stream along the curb. It actually looked very clean. I began to think about what a wonderful resource this was, falling out of the sky, collecting on the street, still pretty clean looking but soon to arrive at the bottom of the hill to flow through the colorful fall leaves previously stacked up over the catch basin where the design of the street was intended to collect the rain water

and then transport it through underground pipes, ultimately to outflow in a stream nearby or out of town.

It's pretty amazing to think about how the natural processes (the hydrologic cycle) take place that provide us with life sustaining water. That will usually lead to the reminder that our own progress and development in our communities causes an impact on our environment and our sources of drinking water. Along with that, we come up with more and more ways to treat, preserve and increase the availability of our water, realizing that it is not an unlimited resource.

We have challenges all around us locally, nationally, and globally concerning our drinking water. Just look at all the news clips that come out. I get overwhelmed with articles by subscribing to Google alerts regarding drinking water; from new developments in providing water to the thirsty in undeveloped countries to waging water war fighting over domestic and environmental uses of water. Information is literally at our finger tips; a few computer key strokes away to access all sorts of materials available. There is an abundance of information from our state drinking water program about source water protection and from the national level both from the Environmental Protection Agency and US Department of Agriculture, Farm Service Agency. Having awareness for protecting drinking water is so much like other habits that we have to work at to either break or develop depending on if it is good for us or not so good. Whether it is maintaining health through proper eating, exercise, or quitting an unhealthy activity, it takes resolve, perseverance and a desire to reach or maintain a goal. Education and sharing information gives a basic foundation to learning what the best things to do are. In the drinking water protection field there are educational materials, curriculum, and science projects available to teach in classes, not only children but everyone, the importance of the valuable resource we have in water alone. The water industry is an enormous field to be involved in, and a necessary one for our very survival.



# Are We There Yet?

Do you want to help others to be able to have safe drinking water? Would you like to learn how to protect your drinking water and its source? Maybe you would like to teach others or put on demonstration projects about the water cycle; sponsor a hazardous waste disposal / pickup event, pharmaceutical disposal, a recyclables collection activity. If it has to do with water, OAWU can help you out. Just keep noticing all those things around us that could eventually impact our water supplies and do something about preventing contamination. Prevention is a whole lot less expensive than treating contaminated water or finding and bringing in an alternate source.

Well my dog walk continues around the corner and back uphill on a different street. The rainfall has subsided temporarily as is the

case in Oregon, and the flow in the gutter has stopped as well. This gutter however, has a strange marking on the bottom. Something was flowing with the water to leave that mark and coloration there. Following it up the hill and around another corner it stops at a driveway. Oh, a place where had there been information about recycling, collection of hazardous wastes from our garages, education about source water protection, maybe one less can of hazardous contamination could have been prevented from going into our water stream. It could be contaminating your drinking water next.

Maybe we need a "Smokey the Bear" slogan. *"Only you can prevent contamination in our source water"* ... I guess that doesn't flow very well.

The walk is nearly completed, Mutt mitt in hand and some litter picked up along the way. "Are we there yet?" Well not quite. We've a ways to go. We'll get there soon.

I like this picture of the old barn for a couple of reasons. First of all it is nostalgic; I grew up around a number of this style of barn. There are lots of fond and not so fond memories related to barns like this. Not only being reminded of the past; but it brings forth the realization that times have changed since those days. Just as we tend to take our supply and sources of water for granted, we are fast approaching a time when the preservation, conservation and protection of our water supplies will be extremely high on our list of priorities. ♦





# Stages in Life

*by Bruce Hemenway, Training Specialist*

In 1976 my brother and I were on our way home from town and decided to stop off at a local tavern for a beer. The young female bartender quickly asked my brother to show his ID. Well, I laughed out loud at his having been carded. The young bartender, and I do emphasize the young part, looked at me and said "don't laugh, you're next." "Ha," I said, "if I show you my ID, I'll need to see yours as well," I told her, "because I don't believe you're old enough to work in a tavern and serve booze."

When all was said and done, we got our beer. And the young bartender said she was over 21 years old. We drank one beer and left.

I was 31 years old, my brother was 25, the bartender, in my opinion, was about 18. Case in point, I got angry because my manhood had been challenged. Obviously, because I can still remember that incident, it made an impression on me.

I would like to relate another story, similar, yet on the other end of the spectrum. I was in a town in south central Oregon in August of 2010. I checked into my motel and went to Sizzler for dinner. I chose an item from the senior menu, walked up to the clerk and informed him of my choice for dinner. Guess what he asked me, he wanted to see my ID. He did not believe that I was over 60. I found the experience totally amusing. I showed him my driver's license that bore witness to the fact that I was actually old enough to partake of a choice from that menu.

My point is, when I was 31 I got angry when being challenged about my age. Now, I find it gratifying that someone would not believe I am over 60. I contribute these changes in attitude to the different stages in life. For instance; when I began training as a water plant operator back in 1971, mandatory operator certification was just being implemented, in some of the states other than Oregon. The rules governing a water plant could easily be read in a half day. We also had a bell jar chlorinator at one of the two plants that I operated. We used orthotolidine to measure chlorine residual which produced a yellow color rather than a pink color, when free chlorine residual is present.

Now after nearly 4 decades, the way we do the business of water treatment has changed

dramatically. Let alone bell jar type chlorinators, chlorine gas is almost a thing of the past as far as being used for disinfection of water. Orthotolidine is suspect of being carcinogenic to those who manufacture it. Mandatory operator certification is required. The rules are ever changing, and if you were to take a few weeks to read through them, by the time you were done something would have changed.

How does a person handle all this change? The "stages in life" are going to be different. I remember a pastor once informing his congregation, the only thing he could guarantee the following week was "change." Not only is how we conduct business going to change, but just like me, you will change as well as you grow older. Hopefully, the coming changes will not leave you frustrated, but with a desire to accept the challenge of change that comes with time.

One area of change that I would like to mention is this: computers. I have actually been told recently, "I don't have email, I don't have a computer and I'm not going to get one. As a matter of fact, I don't even know how to turn one on." I have heard several versions of that conversation over the past 4 years.

Do you remember one of our late presidents often saying "I'd like to say this about that." So would I, like to say this about that. Computers are here to stay. Not only that, but they are becoming more and more part of everyday life in a water plant, in a wastewater plant, in the field with collections and distribution, at the office where the billing is done and records are kept. Even reading meters by hand has given way to such devices as touch read and automated meter reading methods.

One tool that is available to the operators of water plants and distribution systems is the DHS-DWP website. That is, if you have and use a computer. DHS has gone to great lengths to make their website usable for all. DHS continues to improve the site and make it more user friendly. By the way, that is a computer term. Did you know you can access the DHS website by simply going to [www.oawu.net](http://www.oawu.net) and clicking on the convenient link to the DHS-DWP website listed under resources, from the menu on the left of the OAWU home page.

Oregon Association of Water Utilities



And, oh yes, did you also know that beginning July 2011, the Drinking Water Program will become part of the Oregon Health Authority.

The DHS website is a tool that has valuable information, not only about each and every water system in Oregon individually, but links to access other valuable information such as all the rules governing water treatment and distribution systems. There are forms and fact sheets that can be printed and downloaded for use and future reference. [www.oregon.gov/DHS/ph/dwp](http://www.oregon.gov/DHS/ph/dwp)

Here is the bottom line, if you need to drive in a fence post, you can use your framing hammer or you can use a post driver. My point: **MAKE IT EASY ON YOURSELF!** If you would like, any one of our OAWU field staff can stop by your system and give you some "one on one" training with your computer. Actually, all you need to do is ask. You must be honest with yourself however, is it that you really don't like computers, or are you a bit intimidated by them?

I needed to be honest with myself. I am over 60 years old, and I look like it. The only reason that the young man at Sizzler felt he needed to see my ID was because he was young and inexperienced.

Oh, by the way, you can look up a bell jar chlorinator on line. ♦

Believe it or not, **Life is good!**



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# A Funny Thing Happened

by David Branham, Wastewater Technician

Mid October, the weather was fine and all was well, or so I thought, as I made my stop at the wastewater plant. As I opened the door to John's office, I could see by the look on his face that there must be some trouble brewing. John beckoned me in and motioned for me to have a seat next to his desk. As the speaker phone blared away John opened a file that was lying next to him. As he pulled his attention away from the conversation taking place on the phone he pointed at the file and said "What do you know about this?" With the phone conversation continuing in the background, John explained that several systems were on a conference call with DEQ.

It seems that everyone, including the DEQ, had just gotten a shocking surprise. "Have you ever heard of Senate Bill 737?" John asked. I am sure John could tell by the blank expression on my face that I had no idea what he was talking about.

It was evident as I drove home that day that I had a lot of catching up to do, so let's take a look at my findings as I Googled SB Bill 737 and studied it. This is what I found.

## SENATE BILL 737:

### DEVELOPMENT OF A PRIORITY PERSISTENT POLLUTANT (P3) LIST FOR OREGON

DEQ's Final P3 List identified 118 toxic pollutants, that's right, it's not a misprint. These pollutants persist in the environment or accumulate in animals and are divided into two categories. All of the pollutants on the list have potential to cause harm to human health or aquatic life if they get into the water and thereby have potential to pose a threat to Oregon's waters. Some are known carcinogens, and others are believed to disrupt endocrine functions. The list includes both well-studied pollutants that people have worked to reduce for many years, and those for which little information

exists. The two categories that these pollutants have been broken down into are:

### TIER 1: 69 PERSISTENT POLLUTANTS

"Persistent pollutant" means a substance that is toxic and either persists in the environment or accumulates in the tissues of humans, fish, wildlife or plants.

### TIER 2: LEGACY PERSISTENT POLLUTANTS

"Legacy" means a pollutant, the use of which has been banned or restricted for several years that remain at detectable levels in sediment and tissue samples. Pesticides and herbicides as well as Polychlorinated (PVBs and PCNs) fall into this group. Dioxins and furans such as PVC (Polyvinyl Chloride) are also included and some of these have been identified as carcinogenic.

Let's go back and look at Tier 1. There are seven sub-categories in this group and the one that I am going to focus on is: **Pharmaceuticals and personal care product ingredients.**

Pharmaceuticals as a TMDL was not unexpected, I have heard rumblings of this for several years; however, what caught most of us off guard was what was on the list. Any guesses on what was the first to come out of the chute? OK here are the first to come out: Cholesterol, Coprostanol, and a number of Musk related products. There are more but these three are what had John, the DEQ, and the 51 other wastewater facilities that received this notice in such a dither.

A note is in order here. It is not yet required, at this time, for the removal of these substances. However, a WWTP must develop toxics reduction plans by July 2011 to reduce persistent pollutants occurring in their effluent at levels above "trigger

Oregon Association of Water Utilities



# On the Way to the Forum

levels” set by DEQ. What these levels are, I don’t believe have been established yet. Remember, all told, there will be 118 different pollutants to consider.

So let’s break down the three I have mentioned.

**Cholesterol:** what is it? Besides what the doctor says, I have too much of the bad and not enough of the *good* kind. Cholesterol is a Lipid; it is the most plentiful steroid found in animal tissue and is an important component to the human body. It is manufactured in the liver and carried throughout the body in the blood stream. It’s required to build and maintain membranes, aids in absorption of fat soluble vitamins, precursor of vitamin D and steroid hormones.

**Coprostanol:** now this one, I had no idea what it was. Coprostanol is a 27 carbon stanol formed from the biohydrogenation of cholesterol in the gut of most higher animals and birds. This compound has frequently been used as a biomarker for the presence of human fecal matter in the environment. OK that’s fine but what about Musk?

**Musk:** well this one was not entirely unexpected so let’s take a look at it. Since obtaining deer musk requires killing an endangered animal, nearly all musk fragrance used in perfumery today is synthetic. They can be divided into three major classes: aromatic nitro musks, polycyclic musk compounds, and macrocyclic musk compounds. The first two groups

have broad uses in industry ranging from cosmetics to detergents. The detection of the first two chemical groups in human and environmental samples as well as their carcinogenic properties initiated a public debate on the use of these compounds. And so there you have it.

I highly recommend that all wastewater treatment facilities inform themselves as to what is in this bill. I have only touched on a very small portion of the bill.

Try a web search – Google “Oregon SB 737.” The whole bill will come up and you will see that it is quite lengthy. ♦

*See ya down the road! — Dave*

**Whose water will take home the title of “Oregon’s Best Tasting Water” at OAWU’s 16<sup>th</sup> Annual Best Drinking Water Contest and represent our state at the National Best Water Contest in Washington, DC?**

#### **Contest Rules:**

Entrants must be an OAWU Member and in State Compliance.


Bring a clear container of no more than a gallon (mason jars work well) of your system’s drinking water to the Annual OAWU Conference in Sunriver.

Entries must be submitted to the OAWU registration desk located in the Great Hall by 3:00 pm on Tuesday, March 1, 2011.

The container must be clean. You wouldn’t want to contaminate the smell or taste of your entry.

A panel consisting of OAWU and other non-partisan judges will determine the winning Ground and Surface water entries based on clarity, smell, and taste.

The overall “BEST DRINKING WATER” will go to the national drinking water contest in Washington, D.C.

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# Benefits of a Computerized Maintenance

by Craig Watkins

It's 3 p.m. on Friday afternoon and you receive a call from your boss. They ask for a complete asset inventory for ALL the water distribution system assets to include purchase dates, equipment ages, and remaining useful life. To top off the request, they have asked for copies of all the work orders generated from a specific section of a water main that has been a trouble spot for several years. The final request is that you need this information turned in prior to a city council meeting Monday at 8 a.m.!

Many have been in that exact situation; scrambling to capture information and compiling data into a useable format. Nevertheless, it's gratifying to see operators able to use software that assists utilities with this very problem. Still, if you don't have an asset management tool, there are a variety of factors you may want to consider when developing an automated maintenance program.

In the past, managers had to capture this information through massive volumes of hard copy data. This required a large block of time. However; if this facility had implemented an effective asset management program these tasks would be completed in a matter of minutes and transmitted to the boss's email by the end of the business day. Leaving you with more time to complete other assignments for your utility and returning the weekend golf trip that you almost missed out on.

In today's economic environment, it is essential for utilities to effectively manage and maintain their assets. Why is it so important?

First let's look at the definition of asset management: Asset management is maintaining a desired level of service for what you want your assets to provide at the lowest life cycle cost. Lowest life cycle cost refers to the best appropriate cost for rehabilitating, repairing or replacing an asset. Asset management is implemented through an asset management program and typically includes a written asset management plan. (Asset Management: A Best Practices Guide, USEPA)

Utilities can face several challenges when managing their assets. Not to mention the industry talk of the government making asset management plans mandatory, since it helps to cut unnecessary spending. Several of these challenges are due to shrinking workforce, determining the best time to rehabilitate/repair/replace aging assets, increasing demand for services, overcoming resistance to rate increases, diminishing resources, rising service expectations of customers, overwhelming regulatory requirements, responding to emergencies as a result of asset failures and protecting assets.

Water & wastewater utilities which utilize an effective asset management program, realize the benefits of prolonging asset life. These benefits include aiding in rehabilitate/repair/replacement decisions through efficient and focused operations and maintenance, meeting consumer demands by focusing on system sustainability, setting rates based on sound operational and financial planning, budgeting focusing on activities critical to sustained performance, meeting service expectations along with



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# Management (Asset Management) System

regulatory requirements, improving response to emergencies, improving security and safety of assets.

The first step in establishing an effective asset management program is to identify the current state of the utilities assets. Some of the data that should be captured is:

- What equipment does the utility own?
- Where is it?
- What is its condition?
- What is its useful life?
- What is its value?
- Does the utility have a current asset inventory and system map?

Developing a condition assessment and rating system.

Assessing remaining useful life by consulting projected-useful-life tables or decay curves. This information is typically found in equipment operations and maintenance manuals.

The next step would be to determine the required level of sustainable service. This will help implement an asset management program and communicate to stakeholders the goals of the utility. Quality, quantity, reliability, and environmental standards are elements that can define level of service and associate system short- and long-term performance goals. Utilities may use information about customer demand, data from utility commissions or boards, and information from other stakeholders

to develop your level of service requirements. The level of service requirements can be updated to track changes due to growth, regulatory requirements, and technology improvements.

Data utilities should capture:

- What level of service do my stakeholders and customers demand?
- What do the regulators require?
- What is my actual performance?
- What are the physical capabilities of my assets?

The next step in implementing an effective asset management program is to identify which assets are critical for sustained performance. Because assets fail, how utilities manage the consequences of failure is vital. Not every asset presents the same failure risk, or is equally critical to your water system's operations. It is important to know which assets are required to sustain the water system's performance. Critical assets are those identified as having a high risk of failure (old, poor condition, etc.) and major consequences if they do fail (major expense, system failure, safety concerns, etc.). Utilities must decide how critical each asset is and rank them accordingly. Many water systems may have already accomplished this type of analysis in vulnerability assessments.

Data utilities should capture is:

- How can assets fail?
- How do assets fail?

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Contact: Sandy Galaway, Senior Underwriter

- What are the likelihoods (probabilities) and consequences of asset failure?
- What does it cost to repair the asset?
- What are the other costs (social, environmental, etc.) that are associated with asset failure?

Identifying equipment life cycle costs provide a basis for allocating resources, both financial and equipment. Operations and maintenance (O&M), personnel, and the capital budget account for an estimated 85 percent of a typical water system's expenses. Asset management enables a system to determine the lowest cost options for providing the highest level of service over time. Effective asset management optimizes the work O&M crews are doing, where they are doing it, and why. An asset management program helps make risk-based decisions by choosing the right project, at the right time, for the right reason.

Questions utility managers should ask are:

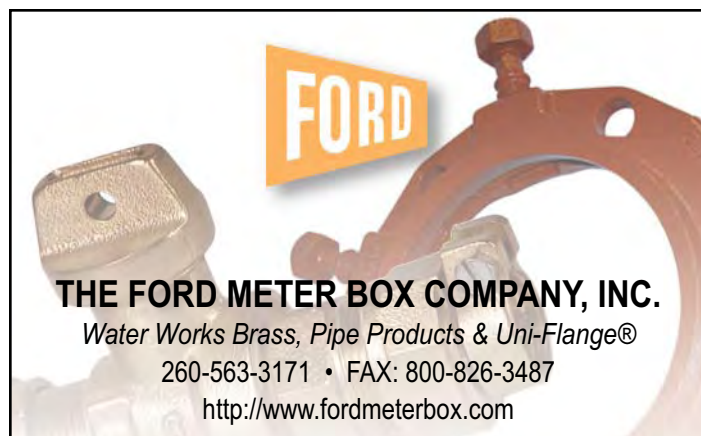
- What alternative strategies exist for managing O&M, personnel, and capital budget accounts?
- What strategies are the most feasible for my organization?
- What are the costs of rehabilitation, repair, and replacement for critical assets?

Sound financial decisions and developing an effective long-term funding strategy are critical to the implementation of an asset management program. Knowing the full economic costs and revenues generated by your water system will enable utility managers to determine the system's financial forecast. Accurate financial forecasts can then help managers decide what changes should be made to your system's long-term funding strategy.

Effective asset management requires an investment in time and resources and is not a 1-year project, or even a 5-year project. It is a continual, fundamental change in the way infrastructure assets are managed. Successful asset management programs are committed to spending time and money to implement the program by focusing on making cost-effective asset decisions with the ultimate goal of providing a sustainable level of customer service for the community.

Thinking about your assets differently can be the first step towards having a sustainable water system. With the limited resources of most systems, shifting away from reacting to events and towards making strategic plans can lead to real financial resource savings. ♦

**About the Author:** Craig Watkins has played an instrumental role in the introduction and customization of the SEMS Software in water utilities across America. Mr. Watkins has spent time working with associations, federal and state government agencies, and thousands of utilities nationwide to develop ways to make compliance and utility management more effective and efficient. He is also responsible for building relationships on the customer level as well as implementing compliance and asset management systems in water utilities and public works departments. SEMS is directly responsible for helping over 25,000 drinking water and wastewater utilities complete Vulnerability Assessments and Emergency Response Plans to comply with the Bioterrorism Act of 2002. Currently SEMS is actively involved with 31 States and is positioned to serve all 50 states with compliance and regulatory software within the next 12 months. More recently, SEMS, in partnership with TRWA, has been contracted by the Department of Homeland Security to bring the new RAMCAP (Risk Assessment Methodology for Critical Asset Protection) and the NIMS (National Incident Management System) to aid utilities in attaining FEMA reimbursement during critical and emergency times. You can download the RAMCAP and NIMS for free at [www.sems technologies.com](http://www.sems technologies.com).



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# Stop Monitoring Violations

by Sam Wade, National Rural Water Association

Is there really any reason that our industry has 113,729 monitoring violations each year?

As you can imagine, the first thought is those smaller systems are the culprits. The fact is that smaller systems do have the majority of violations because they make up the majority of community water supplies in the nation. However, 2008 EPA data clearly documents that monitoring and reporting violations is an industry wide issue for all size systems.

## MONITORING/REPORTING VIOLATIONS BY SYSTEM SIZE

System Size	# of CWS Systems	# of M/R violations	% of M/R violations by system size
< 500	29,160	76,063	26.0%
501-3300	13,858	18,619	13.4%
3,300-10,000	4,838	8,602	17.7%
>10,000	4,132	10,895	26.3%

## MONITORING/REPORTING VIOLATIONS BY NUMBER OF SYSTEMS

System Size	# of CWS Systems	# of systems in violation	% systems in violation by size
< 500	29,160	8,567	29.3%
501-3300	13,858	2,841	20.5%
3,300-10,000	4,838	930	19.2%
>10,000	4,132	746	18.0%

It is safe to say that the process of reporting is also part of the problem. Whenever there are multiple entities communicating with each other and multiple reporting points there are bound to be delays, errors and miscommunication that contribute to the problem and in this case violations.

The failure to monitor is unacceptable but should not be viewed on the same level as monitoring that was completed properly but not entered into a data base somewhere. To reduce these violations, a review of the reporting process will need to be undertaken by each state to identify areas for improvement to lessen errors and ensure

that system monitoring data reaches the proper destination in an accurate and timely fashion.

On the system level, our industry simply has to do better and reduce the number of monitoring and reporting violations. These types of violations whether real or just paper violations give the industry a negative image and provide fuel for political and regulatory action. In this age of technology, social networking, electronic calendars, instant cell phone notifications and other technology it should be an easy issue to resolve, we just need to focus on it and "Get-R-Done." ♦



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# New Annual Source Sampling Requirement for Groundwater Systems that Disinfect

Most groundwater systems that disinfect are required to take an annual sample at each of their active groundwater sources (see Spring 2010 Pipeline article at <http://oregon.gov/DHS/ph/dwp/docs/pipeline/pipesp10.pdf>, page 12).

This is approximately 900 water systems.

As a reminder, this annual source sampling requirement:

- Applies to all groundwater systems that treat with chlorine or other oxidant (ozone), or use ultraviolet light, and are not verifying their 4-log treatment of viruses through compliance monitoring;
- Must be taken at a sample tap installed at each well or spring in use, prior to any treatment;
- May be satisfied by a triggered source water sample (taken after a routine positive in the distribution system) during the same calendar year.

If you have not already collected this annual source sample, please do so before the end of 2010, and mark it as an "Assessment" sample

under the "Source" heading on the Drinking Water Program (DWP) coliform reporting form.

You can check whether your system has collected this sample by using the "Data On-line" feature at DWP web site's (<http://oregon.gov/DHS/ph/dwp/index.shtml>). At Data On-line, look up your water system by name or ID number, then click on "Coliform Results" at the bottom of your system's page. Source samples will be indicated by the "SRC" code under the "Facility" heading.

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## Oregon Association of Water Utilities



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# QUIZ CORNER

- Coliform bacteria are
  - Algae
  - Coagulant aids
  - Indicators
  - Sequestering agents
- Which of the pH readings indicates an acidic wastewater?
  - 3
  - 7
  - 9
  - 12
- How long can bottled water be stored?
  - 1 year
  - 5 years
  - 10 years
  - indefinitely
- According to EPA regulations, a system that operates at least 60 days per year, and serves 25 people or more or has 15 or more service connections, is regulated as a public water system under the \_\_\_\_\_.
  - Clean Water Act
  - Public Health Service Act of 1912
  - Safe Drinking Water Act
  - None of the above
- List these Oregon dams in order of lowest to tallest:
 

*Arthur R. Bowman, Blue River, Cougar, Detroit, Lost Creek*

  - Detroit, Blue River Arthur R. Bowman, Lost Creek and Cougar
  - Cougar, Detroit, Lost Creek, Blue River and Arthur R. Bowman
  - Arthur R. Bowman, Blue River, Lost Creek, Detroit and Cougar
  - Lost Creek, Cougar, Detroit, Arthur R. Bowman and Blue River
- What is the largest lake in Oregon?
  - Detroit Lake
  - Lost Lake
  - Upper Klamath Lake
  - Big Lake
- What systems will be affected by the proposed new Total Coliform Rule?
  - Private water systems only
  - Community & non-community water systems only
  - Schools with ground water only
  - Small water systems only
- Which type of valve would be used to control water hammer?
  - Altitude valve
  - Pressure reducing valve
  - Surge control valve
  - Butterfly Valve
- Heterotrophic Plate Count (HPC) \_\_\_\_?
  - Has no health effects
  - Is an analytic method used to measure a variety of bacteria
  - The lower the concentration of HPC the better maintained the water system is.
  - All of the above.
- When flushing a pipeline for sediment removal a velocity of \_\_\_\_ fps is the minimum you want to flush.
  - 1
  - 2
  - 3
  - 4
- True or False: Running water until it gets noticeably colder will reduce possible exposure to lead and copper.
- The MCL for arsenic is currently \_\_\_\_mg/l
  - .10
  - .50
  - .05
  - .01

**ANSWERS**  
 1-C, 2-A, 3-D, 4-C, 5-B (Cougar 158ft, Detroit 141ft, Lost Creek 105ft, Blue River 95ft, Arthur R. Bowman 75ft), 6-D (Area in sq. miles includes Agency Lake, totaling 140.63 sq. miles), 7-B, 8-C, 9-D, 10-C, 11-True, 12-D



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## **OAWU System Member Scholarship Application**

OAWU will be awarding two (2) scholarships for the Annual Management and Technical Conference in Sunriver 2011. These scholarships include registration, conference meals and social functions. Lodging and transportation will be the individual's responsibility. Award decision based upon membership and system need.

Please submit the application form below by January 28, 2011 to: OAWU, 935 N. Main St. Independence, OR 97351, Attn: Scholarship 2011

Name of Applicant: \_\_\_\_\_

System: \_\_\_\_\_

Address: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone: (        ) \_\_\_\_\_ Email: \_\_\_\_\_

Reason applying for scholarship:

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## **OAWU College Student Scholarship Application**

OAWU will be awarding two (2) scholarships for the Annual Management and Technical Conference in Sunriver 2011. These scholarships include registration, conference meals and social functions. Lodging and transportation will be the individual's responsibility. All applicants must be an active college student in water or wastewater. Submit a 500-word typed essay on why you would like to attend our conference and why you chose the water/wastewater industry.

Please submit the application form below by January 28, 2011 along with your essay and mail to: OAWU, 935 N. Main St. Independence, OR 97351, Attn: Scholarship 2011

Name of Applicant: \_\_\_\_\_

Address: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Home Phone: (        ) \_\_\_\_\_ Email: \_\_\_\_\_

School Applicant is Attending: \_\_\_\_\_

Field of Study: \_\_\_\_\_

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# OAWU's 2011 Annual Conference Awards

## Water operator of the year:

Based on exceptional accomplishments of an individual during 2010. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of two years employed with system.
4. Demonstrates leadership in dealing with daily utility operations and/or concerns.
5. Nominee must be State Certified.



## Wastewater operator of the year:

Based on exceptional accomplishments of an individual during 2010. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of two years employed with system.
4. Demonstrates leadership in dealing with daily utility operations and/or concerns.
5. Nominee must be State Certified.

## Rookie operator of the year:

Based on exceptional accomplishments of an individual during 2010. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of one year employed with system.
4. Demonstrates leadership in dealing with daily utility operations and/or concerns.
5. Nominee must be State Certified.

## Office Manager/Manager of the year:

Based on exceptional accomplishments of an individual during 2010. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of two years employed with system.
4. Demonstrates leadership in meeting office / system demands.

Nominee's full name: \_\_\_\_\_

Employer / system: \_\_\_\_\_

Nomination category: ☐ Water ☐ Wastewater ☐ Rookie ☐ Office Manager/Manager

Description of nominee's achievements and/or accomplishments:

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Please feel free to include copies of awards, certificates, support letters, etc.

Name of person making nomination: \_\_\_\_\_

System/company name: \_\_\_\_\_

System/company phone #: \_\_\_\_\_

**Please return nomination form by Monday, February 1, 2011**

**Send to: OAWU, Nominations Committee**

**935 N. Main St. 97351 / Fax: (503) 837-1213**

**Questions, please call (503) 837-1212**

# OAWU EXPANDED SERVICES

SOC Waivers • Rate Study and Reporting  
Health & Safety Assessments  
Water System Operations, Management & Efficiencies Review  
On-Site Services • Lagoon Profiling  
Water Management & Conservation Plans

We are excited about the development of the Project Management and Services Division of OAWU and the opportunity to better serve you. We encourage you to give special attention to obtain an SOC waiver.

**Oregon Association of Water Utilities**  
935 N. Main St., Independence, OR 97351

We can test  
hydrant flow,  
PSI and much  
more!



Scott Berry  
OAWU Circuit Rider

**FOR BIDS, ESTIMATES OR INFORMATION CALL OAWU: 503-837-1212 OR VISIT WWW.OAWU.NET**

## OREGON ASSOCIATION OF WATER UTILITIES 2011 TRAINING & EVENTS SCHEDULE

Date	Class Title	Location	CEU Information	ESAC#	Fee/Free
January 14	Well Performance Issues	Springfield	0.4 Water	2059	FREE
January 18	Control Valves by GC Systems	Bend	0.7 Water/Wastewater	1741	FREE
February 8	Water Meters	Pendleton	0.6 Water	2069	FREE
February 10	Water Meters	Salem	0.6 Water	2069	FREE
February 28-March 4	33 <sup>rd</sup> Annual Management & Technical Conference	Sunriver	2.0 (+) Water/Wastewater	TBA	FEE
March 9	Membrane Solutions for Regulatory Compliance	Beaverton	0.6 Water/0.3 WW	1858	FREE
March 10	Membrane Solutions for Regulatory Compliance	Tillamook	0.6 Water/0.3 WW	1858	FREE
March 15-16	Wastewater (WWT/WWC) Certification Review	Salem	1.4 Wastewater/0.5 Water	1711	FEE
April 12	Water Meters	Central Point	0.6 Water	2069	FREE
April 14	Water Meters	Florence	0.6 Water	2069	FREE
April 20	Safe Drinking Water Act Update	Medford	0.4 Water	1740	FREE
April 26	Control Valves by GC Systems	Bandon	0.7 Water/Wastewater	1741	FREE
April 26-28	Water (WT/WD) Certification Review	Grants Pass	1.8 Water/1.2 WW	1596	FEE
May 3-5	Water (WT/WD) Certification Review	Salem	1.8 Water/1.2 WW	1596	FEE
May 11	Well Performance Issues	Bend	0.4 Water	2059	FREE
May 18	Safe Drinking Water Act Update	Bandon	0.4 Water	1740	FREE
June 8	Advanced Control Valve	Newport	0.9 Water/0.4 Wastewater	1927	FEE
June 16	Safe Drinking Water Act Update	Salem	0.4	1740	FREE
August 22-25	Summer Classic XVII	Seaside	1.4 (+) Water/Wastewater	TBA	FEE
September 13-14	Wastewater (WWT/WWC) Certification Review	Salem	1.4 Wastewater/0.5 Water	1711	FEE
September 20-22	Water (WT/WD) Certification Review	Bend	1.8 Water/1.2 WW	1596	FEE
September 27-29	Water (WT/WD) Certification Review	Salem	1.8 Water/1.2 WW	1596	FEE
November 1-3	Small System Operator's Conference	Florence	2.0 Water/Wastewater	TBA	FEE
December 6-8	13 <sup>th</sup> Annual End of Year Operator's Conference	Hood River	2.0 Water/Wastewater	TBA	FEE

### 2011 State Water exam dates      Application Deadline

April 2011 (Online Exam)      April 1, 2011  
May 19, 2011      March 15, 2011  
October 20, 2011      August 15, 2011

For additional water exam information, please visit <http://oregon.gov/DHS/ph/dwp/certif.shtml>

### 2011 State Wastewater exam dates      Application Deadline

March 25 (Statewide)      February 1  
March 31 (Pendleton)      February 1

For further wastewater exam information, please visit <http://www.deq.state.or.us/wq/opcert/opcert.htm>

Training class dates, class topic and/or locations may be subject to change as needed.

### Oregon ESAC/CEU accreditation

Phone/Fax: 503-698-8494

[info@oesac.org](mailto:info@oesac.org)

[www.oesac.com](http://www.oesac.com)

For more information on any class by OAWU, please contact the office at 503-837-1212, [office@oawu.net](mailto:office@oawu.net) or visit [www.oawu.net](http://www.oawu.net).



# MEMBERSHIP APPLICATION

(PLEASE TYPE OR PRINT)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

County: \_\_\_\_\_ ZIP: \_\_\_\_\_

System Email: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Operator: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Number of Hook-ups: \_\_\_\_\_

Were you referred? By whom \_\_\_\_\_

## Type of System:

☐ Water ☐ Wastewater ☐ Both

## Membership Category Amount of Dues

<input type="checkbox"/> Regular Member	\$ _____ See schedule below
<input type="checkbox"/> Associate Member	\$400.00
<input type="checkbox"/> Individual Member	\$75.00

## Regular Member Dues Schedule

1 to 100	\$75 + 26 cents per hookup
101 to 500	\$80 + 26 cents per hookup
501 to 1,000	\$90 + 26 cents per hookup
1,000 and up	\$100 + 26 cents per hookup
Maximum dues is	\$890.00

**Mail payment to: OAWU**  
**935 N. Main Street**  
**Independence, OR 97351**

or Submit:

☐ VISA ☐ MasterCard ☐ AMEX

Card #: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Name on Card: \_\_\_\_\_

Signature \_\_\_\_\_

## Membership Types

### Regular Member

A Regular Member shall be any water or wastewater utility, public or private, engaged in the production, distribution or reclamation of water. A Regular Member shall have one vote.

*Annual Dues - See Dues Schedule*

### Associate Member

An Associate Member shall be any organization individual or corporation, supplying services or equipment to wastewater utilities. An Associate Member shall have one vote. For Associate Member Benefits, please contact OAWU.

*Annual Dues \$400.00 per year*

### Individual Member

An Individual Member shall be an individual involved in the water/wastewater industry or a user of such utilities. The membership is informational in nature and shall be non-voting.

*Annual Dues \$75.00 per year*

## Benefits of Membership

- On-site technical assistance
- Various free training programs
- Discounts on training courses
- Discounts on Annual Conference registration
- Access to on-site training program
- Subscription to quarterly H2Oregon magazine
- Direct mailings in your area about upcoming training courses
- Summaries of legislative issues
- Legislative representation at state and federal level
- Associate Member Services and Products Guide
- Access to technical assistance library
- Access to technical and testing equipment for loan
- Voting rights in Association affairs (Regular & Associate Members)
- Positive contacts with other organizations
- Camaraderie with water and wastewater professionals
- Operator Of Record services
- Job referrals, announcements and searches
- Well testing
- Plan review
- System performance evaluation and options
- Additional programs and services
- Disaster response assistance and planning





# MEMBERS



62nd Court Mutual Water Company  
 Adams, City of  
 Adrian, City of  
 Agate Water Company  
 Albany Rifle and Pistol Club  
 Alpine Crest Improvement Dist.  
 Alpine Water Company  
 Amigo Villa Water Service, Inc.  
 Amity, City of  
 Arch Cape Water & Sanitary District  
 Arlington, City of  
 Arrah Wanna Water Company  
 Arrowhead Mobile Home Park  
 Aspen Lakes Utility Company, L.L.C.  
 Athena, City of  
 Aumsville, City of  
 Aurora, City of  
 Avion Water Company  
 Baker City, City of  
 Bandon, City of  
 Banks, City of  
 Barlow Water District  
 Barlow, City of  
 Bay City, City of  
 Bay Hills Water Association  
 Beaver Water District  
 Bella Casa Mobile Home Park  
 Bend, City of  
 Benton County Service District  
 Berndt Creek Water Corp.  
 Black Butte Ranch  
 BLM Eugene  
 Blue River Water District  
 Blue Spruce Mobile Estates  
 Bly Water & Sanitary Dist.  
 Boardman, City of  
 Bonanza, Town of  
 Boring Water District #24  
 Brandy Bar Landing, Inc.  
 Breitenbush Hot Springs  
 Bridge Water District  
 Brooks Community Service District  
 Brownsville, City of  
 Buell-Red Prairie Water District  
 Burns, City of  
 Burnside Water Association  
 Butte Falls, Town of  
 Canby Utility  
 Canby, City of  
 Cannon Beach, City of  
 Canyon City, Town of  
 Canyonville, City of  
 Carlton, City of  
 Carolina Water System  
 Cascade Head Ranch Dist. Improv. Co.  
 Cascade Locks, City of  
 Cave Junction, City of  
 Cedarhurst Improvement Club, Inc.  
 Century Meadows Sanitary System, Inc

Century Meadows Water System, Inc.  
 Chaparral Mobile Ranch  
 Charles Tracts Water Company  
 Chehalem Mt. Sun Ridge Association  
 Chenoweth Water PUD  
 Chiloquin, City of  
 Chlorinators, Inc.  
 Christmas Valley Domestic Water  
 Cimarron City Water Co., Inc.  
 Circle C Improvement District  
 Clarks Branch Water Association  
 Clatskanie, City of  
 Clayton Creek Water Association  
 Cline Butte Utility Company  
 Cloverdale Sanitary District  
 Cloverdale Water District  
 Coburg, City of  
 Colton Water District  
 Columbia City, City of  
 Columbia Hills Homeowners Association  
 Conagra Foods  
 Coquille, City of  
 Corbett Water District  
 Cornelius, City of  
 Country View Mobile Estates  
 Covanta Marion, Inc.  
 Cove, City of  
 Crater Lake National Park  
 Crescent Water Association  
 Creswell Court MHP/IPM  
 Creswell, City of  
 Crooked River Ranch Water Co-Op  
 Crystal Springs Water District  
 Culver, City of  
 Dallas, City of  
 Dayton, City of  
 Dayville, City of  
 Deception Creek Mobile Park  
 Deer Creek Estates Water Association  
 Deerhorn Community Water Association  
 Depoe Bay, City of  
 Deschutes Valley Water District  
 Detroit, City of  
 Dexter Oaks Mobile Home Park  
 Dexter Sanitary Service  
 Diamond Summit Association  
 Dietz Airpark Water System  
 Donald, City of  
 Drain, City of  
 Driftwood Mobile Estates  
 Dufur, City of  
 Dumbeck Lane Domestic Water Supply District  
 Dundee, City of  
 Eagle Point, City of  
 East Yamhill Rural Water Company  
 Eastmont Water Company

Eastshore Water Improvement District  
 Echo, City of  
 Elkton, City of  
 Enterprise, City of  
 Estacada Mobile Village  
 Estacada, City of  
 Eugene Mobile Village  
 Fairview Water District  
 Fairview, City of  
 Falcon Cove Beach Water District  
 Falcon Heights Water & Sewer District  
 Falls City, City of  
 Fern Ridge School Dist. 28J-10  
 Fern Valley Estates Improvement Dist  
 Fernridge Mobile Estates  
 Fir View Water Company  
 Fischer's Place Mobile Home Park  
 Fishhawk Lake Recreation Club, Inc.  
 Florence, City of  
 Forest Park Mobile Village  
 Fossil, City of  
 Garden Valley Water Assn  
 Garibaldi, City of  
 Gaston, City of  
 Gates, City of  
 Gearhart, City of  
 Georgia Pacific-Wauna  
 Gervais, City of  
 Gilchrist Water Co., LLC  
 Gladstone, City of  
 Gleneden Sanitary District  
 Glenmorrie Co-op Association  
 Glenridge Improvement District  
 Glide Water Association  
 Goble Water Association  
 Gold Beach, City of  
 Gold Hill, City of  
 Government Camp Water Company  
 Grand Prairie Water Supply Company  
 Grand Ronde Community Water Association  
 Grand View Mobile Home Park  
 Granite, City of  
 Grants Pass, City of  
 Green Oaks Mobile Ranch  
 Greenhoot Properties  
 Gresham, City of  
 Haines, City of  
 Halfway, City of  
 Hall's Trailer Court  
 Halsey, City of  
 Harbor Water PUD  
 Harrisburg, City of  
 Hebo Joint Water/Sanitary Authority  
 Heceta Water District  
 Heppner, City of

Hidden Valley Improvement District  
 High Lostine Owners Association  
 Highland Subdivision Water Dist.  
 Hiland Water Corporation  
 Hines, City of  
 Hood River, City of  
 Hopewell Water Company  
 Horizon View Hills Water, Inc.  
 Hubbard, City of  
 Hunnell Hills Water System  
 Huntington, City of  
 HWY 58 Trailer Park  
 Ice Fountain Water District  
 Idanha, City of  
 Idleway Improvement District, Inc.  
 Imbler, City of  
 Indian Meadow Water Company  
 Interlachen Water PUD  
 Ione, City of  
 Irrigon, City of  
 Island City, City of  
 Jackson County Parks  
 Jacksonville, City of  
 John Day Water District  
 John Day, City of  
 Johnson Creek Water Services Company  
 Junction City, City of  
 Juniper Mobile Park  
 Keizer, City of  
 Kelly's Brighton Marina LLC  
 Kelso Water Association  
 Keno Water Company, Inc.  
 K-GB-LB Water District  
 Kingswood Heights Water Association  
 Klamath Falls, City of  
 Klippel Water, Inc.  
 Knappa Water Association  
 L.A. Water Cooperative  
 La Casa Mia  
 La Pine Special Sewer District  
 La Pine Water District  
 Lady Creek Water System  
 Lafayette, City of  
 Lake Grove Water District  
 Lakeshore Estates  
 Lakeside Water District  
 Lakeside, City of  
 Lakeview, Town of  
 Lakewood Utilities, LTD  
 Lamplighter Water Association  
 Lane County Parks  
 Langlois Water District  
 Lark Meadows Water Association  
 Laurelwood Academy, Inc.  
 Laurelwood Water Users Co-op  
 Lawrence Subdivision Water Association, Inc  
 Lebanon, City of  
 Lexington, Town of  
 Lincoln City, City of





# MEMBERS



Long Creek, City of  
 Lostine, City of  
 Lowell, City of  
 Luckiamute Domestic Water Co-op  
 Madras, City of  
 Madrone Hill MHP  
 Malin, City of  
 Manzanita, City of  
 Mapleton Water District  
 Marshall Beach Estates  
 Maupin, City of  
 McKay Acres Improvement District  
 McKenzie Palisades Water  
 McNulty Water PUD  
 Medford Water Commission  
 Merrill, City of  
 Metolius Meadows Prop. Owners Assn.  
 Metolius, City of  
 Mill City, City of  
 Milo Adventist Academy  
 Minikahda Water District, Inc.  
 Mitchell, City of  
 Modoc Point Sanitary District  
 Molalla, City of  
 Monmouth, City of  
 Monroe, City of  
 Monument, City of  
 Moran Water System Association  
 Moro, City of  
 Mosier, City of  
 Mossy Brae Water District  
 Mt. Angel Abbey  
 Mt. Angel, City of  
 Mt. Ashland  
 Mt. Bachelor, Inc.  
 Mt. Vernon, City of  
 Mulino Water Dist. #23  
 Myrtle Creek, City of  
 Myrtle Point, City of  
 Nantucket Shores Water Company  
 NeahKahNie Water District  
 Nehalem, City of  
 Nesika Beach-Ophir Water District  
 Neskowin Regional Sanitary Authority  
 Neskowin Regional Water District  
 Netarts Water District  
 Netarts-Oceanside Sanitary Dist.  
 New Bridge Water Supply District  
 Newport, City of  
 North Corvallis Mobile Home Park  
 North Hill Water Corporation  
 North Plains, City of  
 North Powder, City of  
 Northwest Newberg Water Association  
 Nyssa, City of  
 Oak Lodge Sanitary District  
 Oak Lodge Water District  
 Oakland, City of  
 Oakridge, City of  
 Oaks Mobile Home Park

Oceanside Water District  
 Ochoco West Sanitary District  
 Ochoco West Water District  
 Odell Sanitary District  
 Odell Water Company  
 Orchard Heights Water Association  
 Orchard Point Mobile Homes  
 Oregon Shores Beach Club, Inc.  
 Oregon Water Wonderland II Sanitary District  
 Orient Drive Mobile Estates, LLC  
 Otter Rock Water District  
 Paisley, City of  
 Parkdale Water Company, Inc.  
 Parrett Mountain View Estates  
 Perrydale Domestic Water Association  
 Pete's Mt. Water Company, Inc.  
 Philomath, City of  
 Phoenix, City of  
 Pilot Rock, City of  
 Pinecrest Water Company  
 Pioneer Park Water Co-op  
 Pioneer Village Water Company, Inc.  
 Pleasant Valley Water Company  
 Pleasant View Water Company  
 Polehn Heights Water Association  
 Ponderosa Pines Water Company  
 Port of Morrow Commission  
 Port Orford, City of  
 Portland Bureau of Water Works  
 Power City Water Co-op  
 Powers, City of  
 Prairie City, City of  
 Prineville, City of  
 Quincy Water Association  
 Rainier, City of  
 Redmond, City of  
 Redwood Water Service, Inc.  
 Reeder Ranch, Inc.  
 Reedsport, City of  
 Rhododendron Water Association  
 Richland, City of  
 Rickreall Community Water Association  
 Riddle, City of  
 Rimrock West Improvement District  
 River Meadows Improvement District  
 Riverbend Park Water  
 Riverbend-Riverbank Water District  
 Rivergrove Water District  
 Riverview Trailer Park  
 Riviera Mobile Park  
 Roats Water System, Inc.  
 Roberts Creek Water District  
 Rock Creek Water District  
 Rockaway Beach, City of  
 Rocky Pointe Marina  
 Rogue Lea Estates MHP LLC  
 Rogue River, City of

Rogue River-Siskiyou National Forest  
 Roseburg, City of  
 Round Lake Utilities  
 Rufus, City of  
 Running Y Utility Company  
 Salem, City of Public Works  
 Salem-Keizer School District  
 Salmon River Mobile Village  
 Sam's Valley Elem. School Dist. #6  
 Scappoose, City of  
 Scio, City of  
 Scotts Mills, City of  
 Scravel Hill Water Co-op  
 Seal Rock Water District  
 Seneca, City of  
 Shady Cove, City of  
 Shangri-La Water District  
 Shenandoah Home Owners, Inc.  
 Sheridan, City of  
 Sherwood, City of  
 Shorewood Estates  
 Siletz, City of  
 Silver Falls School District 4J  
 Sisters, City of  
 Skylane Farm  
 Skyview Acres Water Company  
 Sodaville, City of  
 South Fork Ranch Homeowners, Inc.  
 South Fork Water Board  
 South Hills Water System, Inc.  
 Southview Water Services LLC  
 Southwest Lincoln County Water District  
 Southwood Park Water District  
 Spirit Mountain Gaming, Inc.  
 Spray, City of  
 Springbrook Water Association  
 Squaw Creek Canyon Development  
 Staffordshire Water System, Inc.  
 Stanfield, City of  
 Star Satellite Improvement District  
 Steeves Mobile City  
 Storlie Water Company Inc.  
 Sublimity, City of  
 Suburban East Salem Water District  
 Sumpter, City of  
 Sunriver Environmental LLC/  
 Sunriver Water LLC  
 Sunset Water Systems, Inc.  
 Sunshine Village Water Association  
 Sutherlin, City of  
 Sweet Home, City of  
 Talent, City of  
 Terrace Mobile Plaza  
 Terrebonne Domestic Water District  
 The Dalles, City of  
 Three Rivers School District  
 Tierra Del Mar Water Company  
 Tigard, City of

Tillamook Bay, Port of  
 Tillamook, City of  
 Timber Water Association  
 Timberline Rim Water Company  
 Tingley Lake Estates  
 Toledo, City of  
 Tollgate Water Company  
 Train Mountain Railroad Museum  
 Trappist Abbey  
 Tri City Water & Sanitary Authority  
 Troutdale, City of  
 Tualatin Valley Water District  
 Turner, City of  
 Twin Rocks Sanitary District  
 Tygh Valley Water District  
 Umatilla, City of  
 Umpqua Basin Water Assn.  
 Union, City of  
 Unity, City of  
 US Army/COE-Cottage Grove  
 Vale, City of  
 Valley View Water Coop.  
 Valley View Water District  
 Veneta, City of  
 Vernonia, City of  
 Waldport, City of  
 Wallowa Lake Co. Service District  
 Warm Springs, Conf. Tribes Reservation of OR  
 Warren Water Association  
 Warrenton, City of  
 Wasco, City of  
 Water Wonderland Improvement District  
 Watseco-Barview Water District  
 Wedderburn Sanitary District  
 Welches Water Company  
 Weldon Mobile Home Park  
 West Hills Water Company  
 West Slope Water District  
 Westfir, City of  
 Weston, City of  
 Westport Water Association  
 Wheeler, City of  
 Wickiup Water District  
 Willamette Water Company  
 Willamina, City of  
 Wilson River Water District  
 Wilsonville, City of  
 Wi-Ne-Ma Christian Camp, Inc.  
 Winston-Dillard Water District  
 Wood Village, City of  
 Woodburn, City of  
 Yachats, City of  
 Yamhill, City of  
 Yoncalla, City of  
 Young Life's WA Family Ranch  
 Young's River Lewis & Clark W.D.  
 Youth With A Mission  
 Zig Zag Water Cooperative, Inc.

## WELCOME NEW MEMBERS

Downey, Michael  
The Dalles, City of  
Carlton, City of  
Deer Creek Estates Water Assn.  
Oak Lodge Sanitary District  
Scowden, Mark

Ekberg, Willaim J.  
Eichel, Dain B.  
Herd, Eric  
Allen, Lee  
Albany Rifle and Pistol Club

Cottam, Austin K.  
Carpenter, Matthew  
Roque, Eric  
Human, Steven F.  
Willer, Keith  
Fitzgerald, Larry

## INDIVIDUAL MEMBERS

Adlesich, Tim  
Allen, Lee  
Alvin, Michael  
Anderson, Wryan  
Baltzor, Rick  
Barber, Paul  
Beauchemin, James  
Benham, Lonnie  
Bergren, Scott  
Biamont, Tony  
Bicknell, Roy  
Bradshaw, Dave  
Brawand, Thomas  
Brooks, Byron  
Brown, Jeffrey M.  
Buckley, John  
Burke, Mark  
Burnham, Bryan W.  
Burres, Brenda  
Burton, Howard  
Bush, Shawn  
Buxton, Doug L.  
Byers, Steven R.  
Campbell, Barry  
Canfield, Larry S.  
Carlton, Larry  
Carpenter, Matthew  
Carroll, Jacqueline  
Cato, Stuart  
Cervantes, Fernando  
Christensen, Brian N.  
Colcord, Troy  
Cole, Michael  
Cottam, Austin K.  
Cox, Travis  
Crouse, Kenneth D. Jr.

Dahlberg, Mike  
Davenport, Ray  
Davis, Ben  
Davis, Guy P.  
De Paz, Geo  
Demannett, Micah  
Desroche, Ron  
Dillard, Bob  
Dobie, Kevin  
Dolbow, Elizabeth  
Doolittle, Ray E.  
Downey, Michael  
Doyle, Raymond R.  
Dunn, Francis M., Jr.  
Eichel, Dain B.  
Ekberg, Willaim J.  
Elder, Dave  
Esparza, Miranda  
Etsel, Matthew  
Evans, Paul  
Evers, Jeffrey C.  
Fitzgerald, Larry  
Flye, Shawn  
Foster, Rob  
Fowler, Robert  
Garrett, Matthew R.  
Gaschler, Steve  
Gohring, Jim  
Graves, Steven R.  
Green, Patti  
Grek, Robert M., Jr.  
Griffon, Beverly "Bev"  
Griggs, Charles  
Gunter, Mark G.  
Haag, Joel  
Hamilton, Howard

Hammond, Daniel  
Hammond, Timothy  
Hansen, Zachary  
Hardy, Vance  
Harth, Gary  
Hartley, Stewart  
Harvey, Mark  
Hecox, Thomas C.  
Hedges, Terry  
Henderson, Paul  
Herd, Eric  
Hodge, Patrick R.  
Hodge, Steve D.  
Hoover, Max  
Horak, Dennis  
Houston, Colin  
Hubbard, Randy  
Huber, Bobby  
Hull, Dave  
Human, Steven F.  
Hume, John  
Hunt, Kevin  
Jansen, Brian  
Jauron, Scott  
Johansson, Leon  
Johnson, Ray  
Kash, Stella  
Keenan, Pete  
Kemper, Brian S.  
Kerby, Kevan N.  
Kirk, Jeremiah  
Klee, Ken  
Klein, Robert E., Jr.  
Klinger, Martin  
Kneaper, Jason  
Kohfield, Gary

Kramer, Larry  
Kratochvil, Chris  
Kroepin, Jay  
Leffler, Charles D.  
Lesueur, Rex  
Littlejohn, Charles  
Lund, Darrell  
Lusch, Stephen L.  
Macuk, Shane  
Maine, Mike  
Malley, Susan  
Marlborough, Norman  
Matteson, Randy  
McClanathan, Mike  
McCune, Tyler  
McKelligott, John  
McKibben, Scott  
McKinley, Raymond  
McLeod, Nancy S.  
McTeague, Kyle  
Merry, Mark  
Meshew, Blane  
Miller, Jim  
Miller, Paul  
Minson, Ronald A.  
Mitchell, Clete  
Montgomery, Martin L.  
Moore, Tom  
Morey, Brian  
Morrow, Brenton  
Mortimore, Roger  
Mott, Chris  
Nebeker, Scott  
Nelson, Bruce A.  
Newey, Jacob R.  
Nigh, Thomas

O'Neill, Dennis  
O'Reilly, Mike  
Patch, Dave  
Paull, Michael W.  
Perigo, John D.  
Perry, Jack  
Peters, Andrew  
Pettersen, Swen  
Piccolotti, Jim  
Points, Frank  
Pollock, Dennis  
Powers, Ron D.  
Reed, John  
Reed, Russ  
Reiersgaard, Michael  
Richmond, Bill H.  
Robertson, Donald F.  
Ronk, Dean  
Roque, Eric  
Rossi, Mike  
Rumely, Leo M., IV  
Sanders, Troy  
Saunders, Shawn V. Jr.  
Schauer, William J.  
Schmidt, Lonny  
Schreffler, Clyde T.  
Schroeder, Erich  
Scowden, Mark  
Shaw, Ben  
Sheppard, Neal F.  
Simenson, Donald J.  
Smith, Randall  
Steidler, Matthew B.  
Stephens, Jim  
Sterzinar, Frank M. Jr.  
Stockton, Stuart V.

Strassner, Bob  
Steele, Mark  
Tabrum, Walter  
Taylor, Brad  
Thayer, Bradley  
Thomas, Dan  
Thomas, Russ  
Turner, Chuck O.  
Turner, Susan  
Tuttle, Robert  
Van Dorn, Kevin  
Van Roekel, Troy  
Vermaas, Dwight A.  
Violette, Jeff  
Visser, Paul L.  
Wallace, Neal  
Weaver, Dixie  
Weaver, Lee  
Weaver, Rick  
Weber, Thomas  
Westphal, Michelle  
Whitlock, George  
Willer, Keith  
Williams, Lisa Kay  
Wilson, David A., Jr.  
Wilson, Rodney T.  
Wolf, Vern  
Woodward, Steve  
Woody, Max  
Zilembo, Quintyn  
Zwald, Nonda

## ASSOCIATE MEMBERS

4B Engineering & Consulting  
A & A Drilling Service, Inc.  
Abbey Systems, Inc.  
American Flow Control  
American Leak Detection  
Anderson Perry & Associates, Inc.  
AquaStore NW, Inc.  
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BioLynceus, LLC  
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Cascade Columbia Distribution Co.  
Caselle, Inc.  
Chlorinators, Inc.  
Consolidated Supply Co.

Ditch Witch Northwest  
DYK, Incorporated  
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Enviro-Clean Environment, Inc.  
EZ Valve-Curb Box Specialist  
Ferguson Enterprises  
Frank J. Martin Company  
Furrow Pump, Inc.  
GC Systems, Inc.  
General Pacific, Inc.  
Global Treat Inc.  
Godwin Pumps  
HACH Company  
HD Fowler Company, Inc.  
HD Supply Waterworks  
Instrumentation Northwest, Inc.


Itron, Inc.  
ITT Water & Wastewater FLYGT Products  
Jordan Schrader Ramis PC  
Kelly-Moore Paints  
Kennedy/Jenks Consultants  
Lakeside Industries-EZ Street  
League of Oregon Cities  
LiquiVision Technology, Inc.  
M & H / Kennedy Valve  
Master Meter, Inc.  
McMinnville Water & Light  
Midland Water Association  
Mueller Company  
Mueller Systems-Hersey Meters  
Natgun Corporation

Neptune Technology Group  
Oregon Meter Repair  
Oregon Public Utility Commission  
Owen Equipment Company  
PACE Engineers, Inc.  
Pittsburg Tank & Tower Co.  
Pollardwater.com  
Public Works Supply  
Ramac Industries, Inc.  
Scenic Fruit Company  
Schoen's Motors  
Schroeder Law Offices, PC  
Sensus Metering Systems  
SolarBee, Inc.  
Special Districts Assn of Oregon

St. Paul, City of  
Taylor Made Pump Stations  
The Automation Group  
The Ford Meter Box Co., Inc.  
The Sherwin-Williams Company  
TMG Services  
Treatment Equipment Company  
Umpqua Research Co.  
United Pipe & Supply  
United Rentals Trench Safety  
USABluebook  
Waterlab Corp  
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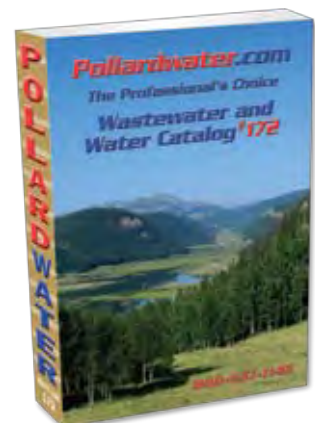
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