

H₂Oregon

Spring 2015
Vol. 37, No. 2

**37th Annual
Conference Highlights
Sunriver, Oregon**

**21st Annual Summer Classic
coming up August 17–20 in Seaside**

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Please mail your photo to our office. If we use your photo on the cover you will receive an official OAWU shirt and hat.

We are also seeking articles, clean jokes, Oregon trivia, letters to the editor and interesting stories. Please send submissions (no more than two pages in length) to:

Oregon Association of Water Utilities

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Cover Photo: Summit Lake
Photo by Scott Berry

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Send your articles with full color photographs, in digital format if possible, to the address listed above.

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H2Oregon is the official publication of the Oregon Association of Water Utilities, and is published quarterly for distribution to representatives of rural and municipal suppliers. Issues are mailed free of charge to member and nonmember rural water/wastewater associations. Articles and photos are encouraged with payment in complimentary copies.

H2Oregon is published for the
Oregon Association of Water Utilities by
Mt. Angel Publishing, Inc.
135 N. Main St., Mt. Angel, OR 97362
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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

Sodaville Says Thank You

SODAVILLE Last fall, more than \$20,000 in office and public works equipment was stolen from the city of Sodaville (pop. 310). Thanks to the generosity of several cities and other government partners, the city has managed to replace the lost items and return to normal operations. The city of Sodaville submitted the following:

“The citizens of Sodaville, Mayor Suzie Hibbert, the Sodaville City Council, City Administrator Judy Smith, and Public Works Director Stan Smith would like to thank everyone for their support in the aftermath of the theft of all equipment from Sodaville City Hall and the city’s Public Works department. It was heartwarming that citizens from other cities as well as the cities of Newberg, Beaverton and Aumsville, along with the Oregon Cascades West Council of Governments, Oregon Surplus, and the American Public Works Association came to the aid of our small city. The equipment and money that was donated was very much appreciated and it allowed the public works department and city hall to continue to serve the citizens in our community. Without the help, our city was hard pressed to function after the theft of all of the equipment the city owned. The city of Sodaville is now up and running and couldn’t have done it without everyone’s support and donations.” ♦

21st Annual Summer Classic

August 17–20, 2015 in Seaside, Oregon

Register today!



Jack Hills retires

Wishing OAWU’s Source Water Specialist, Jack Hills, a wonderful retirement. Jack has been with the association for about 6 years and has worked with systems all over Oregon to develop Drinking Water Protection Plans and those communities continue a commitment to safe, clean drinking water. Jack we will be greatly missed; we wish him and his wife the very best. ♦



Scholarship awarded

On behalf of the Oregon Association of Water Utilities’ Board of Directors, Congratulations to Kaila Trout!

Kaila has been selected as the recipient of the Jeff Swanson Memorial Scholarship in the amount of One Thousand, Five Hundred Dollars (\$1,500.00). We are

very pleased that The City of Elkton is an Association Member and (dad) Gary has the opportunity to benefit through this scholarship. ♦



37th Annual Management & Te

This year's conference was a success; the week gave us beautiful sunny weather. Many of the attendees were able to catch up with old friends and make new ones within the industry. OAWU staff enjoyed serving the members of the association and providing assistance to those in need. Sunriver staff again provided genuine, friendly, excellent service, and great food.

The conference sessions were lead off by Jason Green, OAWU Executive Director, and Mark Beam, OAWU Board President. They welcomed attendees and discussed the state of your association. They were followed by Russ Cooper, National Rural Water Association Director. Russ provided an update on the issues the industry is facing at a national level. This was followed by Mark Landauer who presented an update regarding the legislative issues at the state level.

Back again to Sunriver this year, by popular demand, was Joe Chambers. Joe talked with us Tuesday and Wednesday about coaching and mentoring. The attendees who went to this presentation were able to better understand the necessary interpersonal skills for communicating, personality types and motivational levels. Joe, as usual, was inspirational and thought provoking.

The OAWU annual business meeting was held after class sessions ended on Tuesday. President Mark Beam presided over the meeting as attending members heard committee updates and participated in board member elections. The slate of board members who were re-elected to the board were:

- Ed Butts, 4B Engineering & Consultants
- Mark Kerns, Avion Water Co.
- Gay Melvin, City of Dufur
- Jerry Arnold, West Slope Water District
- Mike Edwards, City of Bend

The officer positions are: Mark Beam as President, Russ Cooper as Vice President, Ed Pugh as Secretary/Treasurer, and Mark Snyder as Past President.

The position that was left open by the passing of Tim Bunnell has been filled by Matt Johnson, City of Amity, for the remainder of the term.

Many attendees were present at the awards banquet, on Wednesday evening, as well as some of families. The Rib-eye steak was great and many good conversations could be heard throughout the Great Hall. Jack Hills was presented with a retirement farewell and recognition for his 45 years of service in the water industry. The 2014 Manager and Operator award recipients are as follows:

- The Manager of the Year award went to Steve Oslie from the City of Aumsville.
- The Office Manager of the Year award went to René Moore from the City of Moro.
- There was a tie for the Water Operator of the Year award which went to Greg Benthin from the City of Gates and to Terry Rust from the City of Turner.
- The Wastewater Operator of the Year award went to Alonso Limones from the City of Donald.
- The Rookie of the Year award went to David Johnson from Knoll Terrace MHC.
- The Associate Member of the Year award went to BioLynceus, LLC.
- The Friend of Rural Water award went to Beth Myers from Waterlab Corp.

Congratulations to all of our award recipients. These awards recognize the dedication and commitment made by those who choose to serve the communities of Oregon every day. Don't forget, if you have an employee whom you would like to nominate for next year's awards, submit the information to the OAWU office for consideration.



The Best Tasting Water award recipients this year were the City of Sumpter for Best Surface Water and the City of Aumsville for Best Groundwater. The submissions are tasted by 4 judges from the water community of Oregon and they decide the best groundwater and surface water, then these winners were go head to head for best overall water in Oregon. The winner of the Overall Best Water category was the City of Aumsville. Their water will be flown to Washington DC and submitted for judging in the Best Water in the Nation contest.

At the Exhibitors Hospitality Night on Thursday there was good food and drink, many door prizes, raffles, and an auction for a massage at the Sage Springs Spa and Sunriver stay won by Mark Burnett from Jackson County Parks; we also auctioned a bottle of Pendleton with was first won by Kriss Schneider from Schneider Water Services who donated the bottle back to be auctioned off again at which point it was won by David Johnson and Kristen Burke from Knoll Terrace MHC, the money went to support the Jeff Swanson Memorial

Continued on page 7

Technical Conference Highlights



OAWU extends a very appreciative thank you to the following exhibitors for their support at the 37th Annual Conference:

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OAWU thanks our speakers for sharing their time and expertise at the 37th Annual Conference.

| | | |
|--|--|--|
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37th Annual Management & Technical Conference Highlights *(continued from page 4)*

Scholarship fund. This year's Jeff Swanson Memorial Scholarship in the amount of \$1,500 was awarded to Kaila Trout whose dad, Gary, works for the City of Elkton. Ty Peterson won the Ugly Sweater contest.

Raffle & Tournament Winners

Dustin Stafford, Jackson County Parks, won the 46" Samsung LED Smart TV from the OAWU raffle; the winner of the WaterPac Raffle of a Henry Big Boy Long Colt .45 rifle, was Russ Cooper, City of Monmouth, and the winner of the Colt Government 1911 SS .45 ACP for the Jeff Swanson Memorial Fund Raffle was Ed Young, Metolius Meadows Property Owners Association.

The winners of the ping pong and cribbage tournaments were announced. First place in ping pong was Troy Cairns from Engineering America. Darryl Walker from the City of Cannon Beach came in second. Bruce Sundseth from the City of Redmond came in third. Rich Varalla from Tripac came in first for cribbage, receiving a championship board. Roy Gonzalez from the City of Medford came in second and Ty Peterson from the City of Redmond came in third. Find the Logo contest winner was Clyde Wagner from Pleasant Valley Water Company.

Special Thanks

We wish to thank our Associate Members for their donations, time and support of this conference and of course the members who continue to believe in and support the Oregon Association of Water Utilities. Specifically, we would like to thank our Silver Sponsor for this year's conference: HD Fowler Company, Inc. and our Bronze Sponsors for this year's conference: EJ, CoBank, BergerABAM, RH2 Engineering Inc.

Be sure to sign up for the Annual Conference next year, the first full week of March 2016, as there will be a slate of new classes to attend, people in our industry to visit with, food to eat, and fun to enjoy. See you there! Best wishes to you, our friends. ♦



CONSUMER CONFIDENCE REPORTS

Don't forget your CCR! Consumer Confidence Reports (CCRs) must be delivered to customers by July 1st. By rule, a copy of the CCR must also be submitted to Oregon Drinking Water Services (DWS) by July 1st.

IF YOU NEED HELP DEVELOPING A CCR, CALL OAWU: (503) 837-1212



CDC Guidance to Prevent

submitted by Jeff Crowther, Wastewater Technician

Who this is for: Workers who handle untreated sewage that comes from hospitals, medical facilities, and other facilities with confirmed individuals with Ebola.

What this is for: To provide recommendations for workers on the types of personal protective equipment (PPE) to be used and proper hygiene for the safe handling of untreated sewage that may contain the Ebola virus.

How to use: Use this document to reduce the workers' risk of exposure to infectious agents including Ebola virus when working with untreated sewage.

Key Points

Ebola virus is more fragile than many enteric viruses that cause diarrheal disease or hepatitis.

The envelope that covers Ebola makes it more susceptible to environmental stresses and to chemical germicides than non-enveloped viruses, such as hepatitis A, poliovirus, and norovirus.

To protect workers against Ebola

- Educate them on what PPE to use to protect broken skin and mucous membranes and how to properly use the PPE, including how to put it on and take it off.
- Develop and fully implement routine protocols that ensure workers are protected against potential exposures (i.e., prevent contact with broken skin, eyes,

nose or mouth) when handling untreated sewage.

- Ensure all workers always practice good personal hygiene, including frequent hand washing to reduce potential exposures to any of the pathogens in sewage.

This guidance is based on current knowledge of Ebola virus, including detailed information on Ebola virus transmission.

Some workers come in contact with untreated sewage before it enters the wastewater treatment plant and could be at very low risk of exposure to Ebola virus. These workers include:

- Plumbers who are in hospitals that are currently treating an Ebola patient.
- Sewer maintenance workers working on the active sewer lines serving the hospital with an Ebola patient
- Construction workers who repair or replace active sewer lines serving the hospital with an Ebola patient

Transmission

Ebola virus is transmitted through:

- Direct, unprotected contact (i.e., with broken skin, eyes, nose or mouth) with blood or other body fluids (e.g., , feces, vomit, urine, saliva, sweat, breast milk, tears, vaginal fluid, and semen) of an infected patient who is actively ill
- Stick injuries from needles and syringes that have been

the Spread of Infectious Disease

contaminated with infected blood or other body fluids and tissue from an infected patient who is actively ill

- Unprotected contact with medical equipment contaminated with blood or body fluids from an infected patient who is actively ill
- Direct, unprotected contact with the body of someone who has died from Ebola

The World Health Organization (WHO) recommends that human wastes, including waste from Ebola patients such as vomitus and feces, be either disposed of through a sanitary sewer or be buried in a pit toilet or latrine with no additional contact or treatment. There has been no evidence to date that Ebola can be transmitted via exposure to sewage.

The WHO has established guidelines for hygiene and PPE to prevent exposure to potential pathogens when working with untreated sewage. In the United States, human waste (i.e., excreta), blood, and other potentially infectious materials are routinely released into sanitary sewers. Wastewater handling processes in the United States are designed to inactivate and remove pathogens, such as Ebola. Workers should follow the guidelines below to prevent exposure to human pathogens, including Ebola virus, when working with untreated wastewater.

Personal Protective Equipment (PPE)

Workers handling human waste or sewage should be provided hand washing facilities at the worksite, PPE (described below), and training on how to use this PPE. The training should specifically address methods for the correct and safe removal of PPE to prevent workers from contaminating themselves or others during its removal. Trained workers should demonstrate both knowledge of the appropriate PPE that they will be expected to wear and use. If using a respirator, the worker should be part of a respiratory protection program that includes medical clearance and fit-testing under OSHA's PPE standard (29 CFR 1910.132). Workers should wash hands with soap and water immediately after removing PPE. Leak-proof infectious waste containers should be provided for discarding used PPE.

The following PPE is recommended for workers handling untreated sewage:

- Goggles or face shield: to protect eyes from splashes of untreated sewage
- Face mask (e.g., surgical mask): to protect nose and mouth from splashes of human waste. If undertaking cleaning processes that generate aerosols, a NIOSH-approved N-95 respirator should be used.

- Impermeable or fluid-resistant coveralls: to keep untreated sewage off clothing
- Waterproof gloves (such as heavy-duty rubber outer gloves with nitrile inner gloves) to prevent exposure of hands to untreated sewage
- Rubber boots: to prevent exposure of feet to untreated sewage.

Basic Hygiene Practices

- Wash skin with soap and water immediately after handling sewage, or any materials that have been in contact with sewage.
- Avoid touching face, mouth, eyes, nose, or open sores and cuts while handling sewage, or any materials that have been in contact with sewage.
- Wash hands with soap and water before eating or drinking after handling sewage.
- Remove soiled work clothes and do not take home to launder. Launder clothing at work or use a uniform service.
- Eat in designated areas away from untreated sewage.
- Do not smoke or chew tobacco or gum while handling human waste or sewage, or any materials that have been in contact with human waste or sewage.
- Cover open sores, cuts, and wounds with clean, dry bandages. 💧



Vacationing in Mexico with a Water Specialist

written by Rachelle Collier for Mike Collier, Training Specialist/Operations

I recently had the joy of vacationing in Mexico with my husband, the “water specialist.” Most people that visit a foreign country look forward to site seeing, learning about the culture, eating good food, and relaxing. By traveling with a water specialist, I also got to learn more than I ever wanted about water. I learned about water on the airplane, water at the airport, water at our resort, and water at every tourist attraction in Mexico.

It started when we were taking our seats on the airplane. We “got lucky” and were able to watch an airport employee fill the plane next to us with water. During flight, my husband compared the sinks between the two airplane restrooms and hypothesized why one sink drained so much slower than the other. When we started our descent into Phoenix for our layover, most people were enjoying how the cars looked as small as ants, but my husband was pointing out water tanks on the hillsides. When we finally arrived in Mexico I heard, “Look, that must be the water system for the Cancun Airport!”

At our resort I made the mistake of asking whether he thought it was ok to drink water from the faucet. Our concierge said no because it was full of “fish poo-poo.” My husband didn’t think that was true and he made it his goal to find out about the water system at the resort. He got really excited when we saw someone digging around the sprinklers and capping sprinkler heads. Surely the sprinkler guy could answer his questions about the resort’s water system! Too bad he only spoke Spanish. He just smiled and said, “yes, yes” to every question my

husband asked. This led my husband to ask the front desk if he could see their water system. It was clear to me that they thought he was crazy and possibly a security threat. The poor guy at the front desk called his manager. The manager got my husband to leave by telling him the head of that department was off for the weekend and wouldn’t be back until Monday. I’m pretty sure the manager was hoping he would leave and she would never see him again. She was wrong. When he asked again about seeing the resort’s water system she said she would talk to the head of the resort’s water department and then call and leave a message on our room phone. He got stood up. She never called. Lucky for us, after some snooping around the parking lot we got a small glimpse of a water pump. Can you believe they would use glue on a six inch PVC pipe?!

One of my favorite places that we visited in Mexico was the cenotes. We went to Dos Ojos Cenote and Aktun Chen Cenote. They were both beautiful and we really enjoyed exploring them. Cenote is the Spanish word for “sinkhole.” Cenotes are created when groundwater continually dissolves and erodes the limestone until it collapses and there is an opening in the ground to the groundwater below. I know this because I was travelling with a water specialist.

In the end, we had a good trip. We saw some great sites, we ate some good food, we relaxed, and I learned a lot about water. I can’t think of anyone that I would rather travel with. ♦

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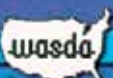
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Survey Says...

by *Heath Cokeley, Circuit Rider*

For the past year or so, our Circuit Riders have been attempting to assist USDA Rural Development and other financing agencies collect some information. The information is used by the lending agencies to compare similar systems and put together the best financing package possible. All participation is voluntary, but there is no downside to providing your information. In fact, it will help streamline the process for all who apply for funding.

The questionnaire is straightforward with fairly easy instructions and all information requested is public knowledge such as:

- Community/Utility Name
- Population Served
- Person filling out questionnaire
- Time period covered with the info provided. (The time period should be from the same 12-month period, i.e. a calendar or fiscal year.) Make sure all data is provided from the same consecutive 12-month period.
- System Information: Please provide information on the type of water system and sewer system. If you have a source combination such as Surface, Groundwater, and/or Purchased water, please provide the percentage of each. The age of the system and information on the major rehab will be requested, as well as, the residential and commercial usage.

The rest of the questionnaire will cover the financials for the same time period (how much revenue was collected and how much was spent for operations and maintenance and debt service).

This is all very important information for every water and wastewater system who is or will be applying for funding.

Thank you in advance for helping us to help the utilities of Oregon. Go to <http://oawu.net/usda-rural-development-seeks-assistance-via-survey/> to download the survey. ♦

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The Quiet Teacher

by *Tim Tice, Projects Manager*

I recently attended a funeral of a 76 year old Scout.

It was a perfect farewell for a man I had known for the past 10 years. Now some may consider 10 years to be a good amount of time, but Don was a quiet man who kept to himself unless he was called upon for service. Don and his wife have been active in Scouting for over 30 years and both have personally been involved with seeing 20+ young boys make the rank of Eagle Scout. With some very nice discussions and speakers honoring Don, I too, wanted to share what Don had shown me during our times together.

Considering the 10 years I realized I may have only spoken to and or worked with Don a couple dozen times. Without, even, Don knowing his unique qualities, who he was and how he lived his life was a great example.

Being a modest man, with a large stature, who worked with his bride to raise a family with qualities and values second to none; his way of life was reflected in the actions of his children and grandchildren. Don's greatest trait was that he never spoke a harsh word of anyone, all the while offering a solution to a situation. He would blend subtle humor into the conversation and you always departed from him feeling good.

Another quality of Don, was his willingness to serve, as I learned from many friends and acquaintances,

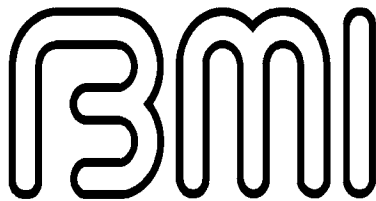
Don worked hundreds of hours building a church in a young community where they lived.

His third major asset, yet not the least of Don's qualities, was his firm faith in Christian values and his ability to share a short, but impactful narrative about an experience he went through earlier in his life.

He was an outdoorsman who loved fishing, hunting and camping and many times spoke of the wonder of the earth. I believe that this man was a deeper thinker than his introverted life was able to share, and in a quiet sense, Don intrigued me with his demeanor.

From time to time, people intrigue me, and in a way challenge me. If we can learn three simple lessons from someone who you will never know, imagine how much we can learn by getting to know one another.

If we can enhance our lives by, 1) never speaking a harsh word, 2) being willing to serve, and 3) sharing a set of positive values, then who might be impacted and learn from our lives? You may already have intrigued someone without even realizing it and kudos to you. When we willfully live, love and work in a way that is out of the norm, we will intrigue people, have them wonder, and possibly imitate what they had observed in our words and actions. *The best that life offers!* ♦



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Planning for Contaminat

by Scott Berry, Circuit Rider/Program Manager

Many that have been in OAWU's classes about emergency preparedness have heard about a specific incident that happened several years ago.

It was a warm Friday in October of 2001, those of you who were in the industry then will remember the weekly faxes from the FBI telling us about vague threats being made against the public water providers. That morning I had my coffee and breakfast while watching the latest news coverage of the still-smoking pile of rubble at the base of what used to be the World Trade Building in New York City. The memories of the buildings coming down, the three days of looking up and not seeing any jet contrails in the blue sky, and all the news coverage of anthrax-laced letters to the politicians and public figures were what I had on my mind as I left for work that day.

One of the FBI's recommendations was to patrol all water facilities at least twice a day, and we were doing just that. The water system I worked for was geographically quite large, covering 165 square miles of mostly farm and forest land, and it took about 2 hours to cover the route. That left us about 4 hours in the middle of the day to see to the business at hand.

Halfway through the afternoon check my crew called me on the radio and told me that there was evidence that someone had climbed up the outside of the ladder cage and

gained access to the vent at the top. When I got there, I could clearly see the scuffmarks in the oxidized paint where they climbed and footprints at the top. I immediately isolated that tank, took it offline and had my crew finish their rounds.

In my mind, I was running through possible scenarios and what should happen next. That tank was in a fairly remote, wooded area. From the top of the tank, a person could see a large grove of oak trees and about 10 acres of Christmas trees. I had just about convinced myself that someone was using our tank as a tree-stand for deer hunting when my crew again called and said that there were 3 other tanks in the area with the same signs of access.

It was at this point that things started to pick up momentum. I called my board President, briefed him, and followed that up with a call to the County Environmental Services Coordinator for advice on how to proceed. Over the next couple of hours, we isolated the tanks and rerouted as much water as we could. We kept the office open and had board members and volunteers man the phones and we put out a Do Not Use order.

I was still thinking that there was nothing very sinister afoot, but for that period of time, I didn't KNOW that the water was safe so we had to act accordingly.

Over the next several hours, elected officials, engineers, and

ion Threats and Incidents

law enforcement were all giving me advice. Most conflicted with what the others were saying. If you ever find yourself in similar circumstances, remember, it's your water system and your responsibility. Accept appropriate advice, but filter it through your knowledge and experience.

My next call was to the lab where we had our routine water tests done and that's when some semblance of sanity started to return. She was able to get me lined out on what, how, and where to sample. By midnight, I had sent most of the crew home and the phones were being manned by a couple of volunteers who were providing scripted answers. I gathered my 48 quart-jar samples and headed to the lab.

(If you don't have a good working relationship with your lab and a good set of baseline testing done, do

whatever you have to do to get that done!)

Beth met me at the lab at midnight and had preliminary results to me by 9:00 the next morning.

Among the many lessons learned through the course of this incident were:

- No one knows your system like you do. Accept advice, but do what YOU think is best.
- Include intentional contamination scenarios in your ERP and train your staff on what to do.
- Develop guidelines for staff and volunteers to follow.
- Establish an incident command structure and train accordingly.
- Assign a Public Information Officer to deal with press and to draft a message to the public. It's vital that a consistent message is provided.

- Develop a method of communicating and notifying the public.
- Train! Use desktop scenarios and include field exercises.
- Enhance physical security.
- Establish a baseline monitoring program so even if you don't know what to specifically test for, you can determine if something has changed.

You can't foresee and prepare for every type of threat or incident, but you can adopt an attitude of due-diligence and instill that attitude in you staff with training. You react as you train.

In this day and age, security is everyone's responsibility. With time and training, you will know what each member of your staff is supposed to do—and they will have the tools and resources to deal with most incidents. 🍀

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How Technology has Changed Communication

by Hans Schroeder, Circuit Rider

Business doesn't happen face to face as often as some would like. Instead, today's communication depends on conference calls, email chains, text messages, and calendar notifications. This can make it challenging to get to know those you are working with. So many people have become dependent on technology and that's not all bad, as long as we use the technology to make the new way of working more human.

Meetings used to take place around a table and cookies. Today, it's on documents being edited by multiple people, sharing screen data and chatting via satellite. The satellite concept has changed the way we look at meetings, but that isn't all bad especially when you can save on travel and still be there virtually. You might even find the meetings will be shorter without the urge to sit and visit, getting right to the task at hand.

For employees you will find technology opens up a quicker form of communication. Instead of coming into City Hall or office to check the in-box; messages can be sent right to a smartphone or tablet. This becomes very important when it comes to an emergency. The communication between you and a fellow worker is only as far away as the

'SEND' button. No more saying, "I will find the public works department to let them know of an emergency," you can just call or text.

One area in the water and wastewater industry that has seen the biggest effect from technology would be that of telemetry systems. Now we have devices that will call with an alarm if there is a problem and even tell us what that problem might be. Some of this can be good when we can be in-touch at all times, but it takes away the physical aspect of checking in on the equipment. Technology has taken away the need to be around to turn off the irrigation pumps because they are now set by timers for the allotted run time. Even the radio read meters technology has taken the human factor of physically walking around and reading each meter.

What seems to be the 'norm' now is checking our smartphones, tablets, and computers. We are losing the human face to face conversations and we better embrace that fact and continue to move forward with the upcoming trends in technology. We must still remember the importance of the human factor in all our businesses. ♦

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| Date | Class Title | Location | CEU Information | ESAC# | Fee/Free |
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| Apr 1 | Confined Space & Jobsite Safety | Beaverton | 0.6 Water/Wastewater | 2886 | Fee |
| Apr 7-8 | Water (WT/WD) Certification Review | Salem | 1.4 Water/0.7 Wastewater | 2787 | Fee |
| Apr 14 | Wastewater Treatment & Labs | Sublimity | 0.4 Wastewater | 2883 | Fee |
| Apr 15 | SDWA Update | Newport | 0.4 Water | 2887 | FREE |
| Apr 22 | Math for Operators | Eugene | 0.4 Water/Wastewater | 2885 | FREE |
| Apr 23 | Water & Wastewater Field Operations & Safety | Pendleton | 0.6 Water/Wastewater | 2944 | Fee |
| Apr 28 | Disinfection Options for Water & Wastewater | Newport | 0.4 Water/Wastewater | 2888 | Fee |
| May 6 | Water Rights & Other Legal Issues | Beaverton | 0.4 Water | 2717 | FREE |
| May 6 | Wastewater Law 101 | Beaverton | 0.2 Wastewater | 2893 | FREE |
| May 14 | Control Valves | Bend | 0.5 Water | 2884 | FREE |
| May 14 | Water & Wastewater Field Operations & Safety | Salem | 0.6 Water/Wastewater | 2564 | Fee |
| May 27 | Math for Operators | Tillamook | 0.4 Water/Wastewater | 2885 | Fee |
| May 27 | Pumps & Pumping | Tillamook | 0.4 Water/Wastewater | 2862 | Fee |
| Jun 2-3 | Water (WT/WD) Certification Review | Salem | 1.4 Water/0.7 Wastewater | 2787 | Fee |
| Jun 17 | Mini Expo | Independence | 0.4 Water/Wastewater | TBA | FREE |
| Jun 24 | Water Treatment & Labs | Grants Pass | 0.4 Water | TBA | Fee |
| Jun 24 | Water Treatment & Labs | Riddle | 0.4 Water | TBA | Fee |
| Jun 24 | Water Treatment & Labs | Tillamook | 0.4 Water | TBA | Fee |
| Jul 8 | Preparing for Your Water System Survey | Salem | 0.4 Water | 2881 | Fee |
| Aug 4 | Disinfection Options for Water & Wastewater | Salem | 0.4 Water/Wastewater | 2888 | Fee |
| Aug 4 | Water Operator's Toolbox | Pendleton | 0.4 Water | TBA | Fee |
| Aug 5 | SDWA Update | Salem | 0.4 Water | 2887 | FREE |
| Aug 6 | Water Wells 101 | St. Paul | 0.4 Water | TBA | Fee |
| Aug 17 | Effective Utility Management | Seaside | 0.6 Water/Wastewater | TBA | FREE |
| Aug 17-20 | 21 st Annual Summer Classic | Seaside | 1.7 Water/Wastewater | TBA | Fee |
| Aug 25-26 | Water (WT/WD) Certification Review | Bend | 1.4 Water/0.7 Wastewater | 2787 | Fee |
| Sep 2-3 | Wastewater (WWT/WWC) Certification Review | Salem | 1.4 Wastewater | 2882 | Fee |
| Sep 9 | Developing Your O&M Manual | Florence | 0.6 Water/Wastewater | 2780 | Fee |
| Sep 16-17 | Water (WT/WD) Certification Review | Salem | 1.4 Water/0.7 Wastewater | 2787 | Fee |
| Sep 17 | Wastewater Treatment & Labs | Newberg | 0.4 Wastewater | 2883 | Fee |

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For additional information, please visit <http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/OperatorCertification/Levels1-4/Pages/exams.aspx>

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A Better Way to Live

*Throwing My Loop
by Michael Johnson*

At 35, he was a wandering derelict - a hopeless alcoholic thinking about spending his last few dollars on a suicide pistol. Then, something happened. Later, he began to write and the day would come when thousands from all walks of life would say his words helped them change their lives for the better. Today, his 16 books have sold 36 million copies world-wide. What on earth could have been so powerful in this man's life to create such a change? You might be surprised to hear the answer...

He went to a library! His name was Og Mandino.

When Og Mandino was in the valley - on his way to the end of lonely street - he happened to stop in at a library and read a few books - both modern and classic - about people who had been at rock bottom and yet came back. Moved by the books, instead of killing himself, he decided to change his life for the better and help others do the same.

I've met many people who have done something similar. Not that they sold million of books, but they did in fact,

make profound changes in their lives How do people do that?

First, there has to be pain. People who make dramatic turnarounds always tell the story of being in an unpleasant situation. Death of a loved one, divorce, loss of a job - something so painful the person is desperate to find a different place. Dissatisfaction with our lives can be a powerful motivator and spur us on to do things we didn't know we could do - if the pain is bad enough.

Reminds me of an old joke...

A farmer is sitting on his porch as a salesman approaches. The salesman notices the farmer's dog lying beside him, and the dog is crying. "Why is your dog crying?" asks the salesman.

"Oh, him?" says the farmer. "I think he's sitting on a nail."

"Why doesn't he move?" asks the salesman.

The farmer replies, "I guess it's not hurting him enough to do anything about it yet."



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Once we decide “something must be done,” we enter Phase Two of all turnarounds.

Since we are desperate enough...we go out in the world and try. That is the moment – if you listen closely – you can hear the angels begin to sing. (Angels can’t do much if you sit on the couch and mope.)

When we go out in the world and try, the very first thing that happens – this always happens – is that we run into somebody who tells us we can’t. For some reason I can’t explain our first encounter is often with some smarmy jerk who says things like, “You’re not college material,” or “Aren’t you a bit old to be doing this?” Or “If I were you, I wouldn’t quit my day job.” (I swear if I ever hear anyone say that again, I’m going to stab them.) But take heart - you are about to enter Phase 3 of all turnarounds...

Keep on. If we go out in the world, there’s a 50/50 chance something is going to happen. If we don’t try, there is a 100% chance nothing will happen.

Keep on because if you keep trying, something is coming to help you. Might be in the form of a book – like Og – or sooner or later, you are going to meet a positive person with some sense. One of these (angels?) will say, “Other people did it. I don’t see why you can’t.” And others will come. After suffering through the highs and lows, bumps and spills, one day you will realize, “I’ll be darn. I didn’t do so badly after all.” If you keep trying, they come. Have faith.

I had a student once. She couldn’t speak English. She worked two jobs all the while she attended school. She graduated with honors. I asked her how she did that...

“I’m the opposite of paranoid,” she said.

“What is that – the opposite of paranoid? What does that mean?” I asked.

She said, “If I worked hard enough, I always knew there was a conspiracy of people out there who were going to help me.” ♦



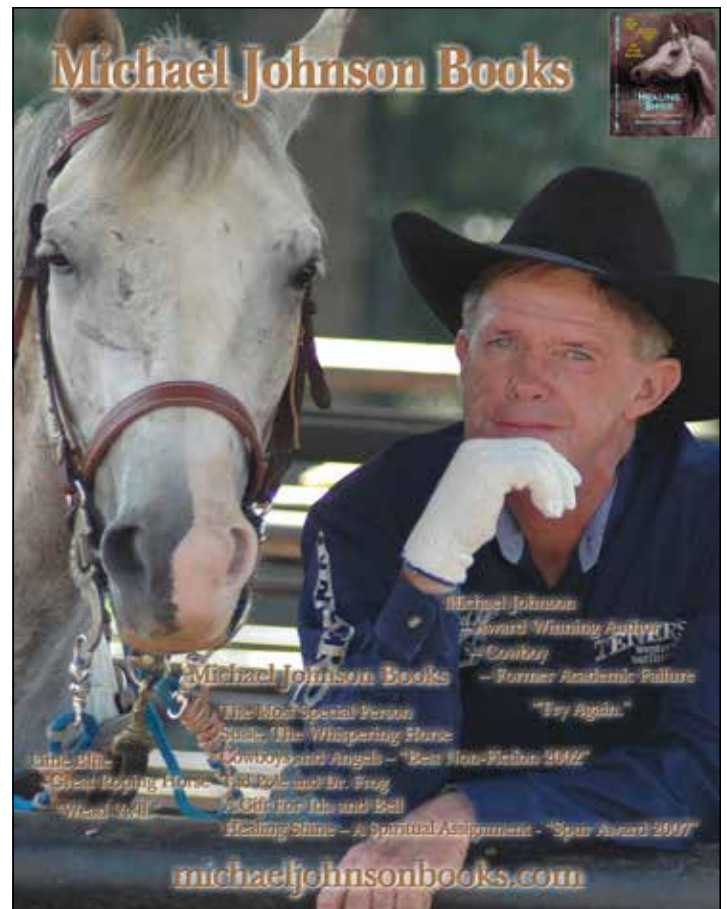
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From Fish Screens to Fire Hydrants

Deep in the forest near the small Oregon town of Corbett in the Columbia River Gorge, the crew had set up camp at the water intake on the north fork of Gordon Creek, ready to clean the fish screen every 30 minutes through the night to ensure a consistent flow of water to the town. Corbett Water District manager, Jim Jans, was up late too, thinking of all the things his District could be doing with the money that was now going to pay his workers the overtime required to just keep the water flowing. All that old pipe that needed to be replaced, all those new fire hydrants. And, above all, the critical need to keep utility costs down for the District's 1,100 customers during very tough economic times.



The problem was the fish screen. Installed to protect fish at the District's surface water intake, the vertically oriented screen was out of compliance

and constantly clogged in the fall and spring, as high levels of organic debris (leaves, pine needles, sticks, etc.) carried along by the stream smacked

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Corbett Water District benefits from upgrades and in-conduit hydro

up against the screen surface and stayed there. Until of course, someone drove the 2 miles into the forest to manually clear the blockage.

In 2010, Jim reached out to Farmers Conservation Alliance (FCA). Based in Hood River, Oregon, FCA sells a fish screen developed locally to handle the same stream conditions for water users in the nearby Hood River Valley. “The Farmers Screen was developed by Farmers Irrigation District here in Hood River to provide a way to protect fish and get water sourced from streams with high sediment and debris loads to the farms while lowering maintenance costs,” explains Les Perkins, FCA Business Development Director.

Jim and Les worked together on project permitting, and in April of 2011, FCA installed a new Farmers Screen, into an existing concrete structure at the intake site. Three years later, Jim says, “We have had no overtime calls, it’s never plugged up. So, it’s eliminated the overtime and the screen has always allowed water to flow into the plant. We keep our



ponds full. We keep our reservoir full. Nobody’s ever run out of water.”

With the headaches from the old fish screen finally alleviated, Jim was able to move on to his next big efficiency project for the District – installing a small, in-conduit hydropower generator that could generate just enough electricity to off-set the costs to run the treatment plant. Benefits of this project were realized with the District’s first electricity bill. “Thanks to the

net-metering agreement with PGE, what was normally a \$400 electricity bill was \$0,” beams Jim. “But the screen was our major accomplishment because we cut back on the overtime. The more money we save on overtime, the more we can spend on our distribution system. I can get more pipe replaced, install more fire hydrants, and ensure water for the customers in compliance with the Safe Drinking Water Act.” ♦

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Can Mixing Systems Help Prevent Aging

In the past, many water operators thought daily turnover and fluctuation of volume was enough to mix the water in a storage tank. Today, research and tests are showing more effort may be needed to effectively mix storage tank water and improve water quality. Several water tank features can contribute to how effective water is mixed and the rate at which it ages.

A tank's design, daily use, and location in the system should all be considered when deciding the best action for improving water quality. Tanks with high height to diameter ratio, such as standpipes, are more susceptible to aging surface water because greater water variations can develop among the many layers. As the distance between surface and bottom water increases, more effort is required for the bottom layers to reach the distant top layers. Same thing applies when inlet and outlet pipes are both placed in the bottom ring of a tank: the new incoming water is also the first to exit the tank while surface water is left to continue aging. However, if the inlet pipe is extended to allow over-the-top filling, then surface water can be pushed to the bottom and mixed with incoming water.

“Water quality is a significant concern to water distribution system managers. Disinfection by-product (DBP) formation is largely dependent on reaction time, and it can continue for several days within the distribution system. At the same time, disinfectant residual must be maintained throughout the most remote components of the system to ensure pathogen-free water. Managing the residence time of water within storage tanks is one practice available to minimize water age within the distribution system. Water system managers and engineers should consider the need for circulation of water and residence time management within storage tanks during the design phase.” —AWWA M42

Although, water quality and circulation are often discussed during the design phase, they are continuing concerns for water operators. Deaths and illnesses occur daily from unhealthy water, and water operators can lose their license to operate a water system if unhealthy water is found in their system. Great responsibility comes with being a water operator and many pride themselves on providing excellent water quality. A popular method for improving water quality is to install a mixing system. Mixing systems can help prevent aging surface water that often leads to stratification, accumulation of disinfectant by-products, water quality loss and ice formation.

Stratification

Stratification occurs when water has become separated into layers. Layers are arranged according to density, and density differences are created when variations of water temperature

or pH exist. The warmer, less dense, older water sits above the cooler, denser, new water coming in creating layers. The incoming water stays near the bottom and is also the first to exit the tank if an over-the-top fill has not been installed. The top layer of older water is left to age even further. As water ages, the quality deteriorates and bacterial growth increases. The bacteria may not cause sample problems in the warmer months, but may show up when the older, surface water begins to cool and sink to the bottom in the cooler months.

Water temperature can be checked every five feet during an inspection to help determine whether stratification is a problem. If stratification is an issue, then a mixing system may be needed. Mixing systems should be designed according to the tank's unique dimensions and needs. Most are designed to take the denser, newer water from the bottom and mixing it with the less dense, warmer surface water. Mixing helps maintain consistent water temperatures and pH levels throughout the tank thus preventing stratification. However, mixing must occur regularly to prevent reoccurring stratification, sample inconsistencies and inaccurate disinfection treatment.

Disinfectant By-Products

Disinfectant decay occurs when chemicals used for disinfection react with other organic material, organisms, and surfaces. These reactions create carcinogenic disinfectant by-products known as Trihalomethanes (TTHMs) and halo-acetic acids (HAAs). By-products are present in almost all chlorinated water supplies, but the key is keeping these levels as low as possible. Mixing systems can help keep these levels low by effectively blending all water with disinfectants to ensure no zone within the tank experiences and extended contact time. When disinfectant contact time is balanced through proper



Surface Water?

by Erika Henderson, Director of Research
Pittsburg Tank & Tower

mixing, less chlorine concentration is needed and thus fewer by-products are produced.

Ice Formation

Most compounds become denser as they change from a liquid to a solid because the molecules become more tightly packed. But water is most dense at 39.2°F (4° C), and becomes less dense at lower temperatures causing ice to float. Water in a tank is the same and according to NFPA 25, “the temperature of water tanks shall not be less than 40°F (4.4°C).” When temperatures fall below freezing, ice can form on the surface. The ice will continue to expand and get thicker as the water temperature remains below freezing. Ice can cause serious damage to a tank: tank coatings are often damaged, pipes can become clogged, leaks and structural damage can result, and even tank failures have occurred from ice forming in water tanks.

“When a tank freezes, one or more of the following conditions usually results and cause leakage.

- Inside overflow or other piping breaks occur.
- Ladders or other attachments to the container are pulled out by ice, making a hole at the point of attachment.
- Ice pressure can expand and place hoop stress loads on the steel and seams, which may cause the tank wall to yield or burst.
- Leaks due to corrosion become apparent.”

—AWWA M42

Mixing systems can provide regular water circulation to help maintain a consistent water temperature above freezing and prevent the water from separating into layers where dangerous ice can form on the surface and sides of tanks.

Maintaining Water Quality

All tanks should be regularly monitored for mixing efficiency, but tanks with low filling cycles, high volume, or at the end of



a water system should be monitored more often. These types of tanks may not only require mixing system upgrades, but may also require more frequent inspections and cleanings to maintain water quality and reduce aging surface water. Mixing systems can help prevent aging surface water, but they must be designed and installed properly to be effective. A reputable tank company with knowledge and experience in these types of upgrades should be contacted to perform the work.

For further information on water tanks and mixing systems please contact Don Johnston at 270-748-1343 or djohnston@watertank.com. ♦

References

American Water Works Association, 2013. Steel Water Storage Tanks. Manual M42 Revised Edition, Chapter 5, Water Quality Issues.

American Water Works Association, 2013. Steel Water Storage Tanks. Manual M42 Revised Edition, Chapter 10, Results of Freezing.

National Fire Protection Association, 2011. Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. NFPA 25 2011 Edition, Section 9.2.4.1.

System O&M Manuals Required

Oregon Association of Water Utilities has prepared a full day class to assist operators in outlining an operations and maintenance manual per the Oregon Administrative Rule 333-061-0065 which requires each water system to develop an operations and maintenance manual.

This class assists the water and wastewater system operator in outlining the specific points in developing the draft of the

O&M manual. Step by step, each attendee creates a draft as it relates to their utility system during class. The e-file may then be completed back at the system office.

Class cost is \$155, or if you are unable to attend a class you may purchase a thumb drive with e-files for \$155. To sign up for the class, or to have a thumb drive mailed to you, contact your Association for further information. ♦

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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

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

Annual Dues \$400.00 per year

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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.

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- Well testing
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Three Rivers School District
Tierra Del Mar Water Company
Tigard, City of
Tillamook Bay, Port of
Tillamook County Creamery Association
Tillamook, City of
Timber Water Association
Toledo, City of
Tollgate Water Co.
Tone Water
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
Ukiah, City of
Umatilla, City of
Umpqua Basin Water Assn.
Union, City of
Unity, City of
US Army/ COE, Cottage Grove Lake Office
Vale, City of
Valley View Water Co-op
Valley View Water District
Veneta, City of
Vernonia, City of
Vida-Lea Community Cooperative VMWID
Waldport, City of
Wallowa Lake Co. Service District
Wallowa, City of
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
Weiss Estates HOA, Inc.
Welches Water Company
Weldon Mobile Home Park
West Hills Water Company
West Linn, City of
West Slope Water Dist.
West Yamhill Water Company
Western Heights Water Association
Westfir, City of
Weston, City of
Westport Water Association
Wheeler, City of
Whispering Pines #4
Wickiup Water District
Willamette Water Company
Willamina, City of
Wilson River Water District
Wilsonville, City of
Winchester Bay Sanitary
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 Washington Family Ranch
Young's River Lewis & Clark W.D.
Zig Zag Water Cooperative, Inc.

WELCOME, NEW MEMBERS!

John Adams
Michael Angell
Oscar Arellano
Kirk Barham
Roy Bicknell
Larry Carleton
Roy Carter
William Chacon
Vince Chavez

Tony Degn
Edgar Dix
Audrey Edwards
Tyler Everall
Warren Felton
Pat Gammell
Chris Goetz
Jason Gosling
Daryl Hensley

James Hughes
L. Alan Johansson
Randall Jones
John Mason
Rachel McAllister
John McKeivitt
Steve Merritt
Richard Perry
Chuck Rapelje

William Schmittle
Kent Schnell
Steve Starnier
Matt Thompson
Carolyn Todd
Susan Turner

Biggs Service District
Jasper Knolls Water District
Salem-Keizer School District
Silverton, City of
Sunshine Village Water Association
Sunrise Water Authority
Vida-Lea Community Cooperative
Winchester Bay Sanitary

INDIVIDUAL MEMBERS

Albiston, Garrett
Adams, John
Anderson, Brian
Anderson, James
Anderson, Ken
Anderson, Kevin
Angell, Michael
Anthony, Joe
Arellano, Oscar
Ashenberger, Jacob
Baker, Scott
Barham, Kirk
Barnett, Brion
Barton, Brent
Bauer, Kyle
Beauchemin, James
Bell, Ron
Biamont, Tony
Bicknell, Roy
Blake, Mike
Blezinski, Robert
Bradshaw, Dave
Brown, Jeff
Buckley, John
Burton, Howard
Buskirk, Jeff
Caire, Tim
Carleton, Larry
Carlson, Kimberly
Carlton, Larry
Carson, Paula

Carter, Roy
Cass, Bradley
Chacon, William
Chavez, Vince
Clark, Jamie
Clark, Kenneth W.
Clement, Tony
Close, Greg
Costantino, Gregory
Dahlberg, Mike
Dammeyer, Scott
Daniel, Morgan
Davenport, Ray
Davis, Guy P.
Davis, Willie Jr.
Degn, Tony
Desroche, Ron
Dillard, Bob
Dix, Edgar
Dobie, Kevin
Dolbow, Elizabeth
Dunn, Frank
Durfee, Kenneth C.
Eckley, Paul
Edwards, Audrey
Ehredt, Tyler
Elder, Dave
Estrada, David
Evans, Peter M.
Everall, Tyler
Farris, Randy

Felton, Warren
Flande, Mark
Forseth, Steve
Foster, Rob
Frahm, Dave
Free, Derek
Fujisawa, Kellen
Gammell, Pat
Geiman, Dave
Gill, Robert J.
Ginter, Brian
Goetz, Chris
Golden, Kirk
Gonzalez, Jorge
Goodpasture, Joe
Gosling, Jason
Grabner, Robert
Grek, Robert
Griffin, Beverly "Bev"
Halverson, Bruce
Hanes, Cameron R.
Hannen, Scot
Harrod, Ron
Hecox, Thomas
Henderson, Shane
Hensley, Daryl
Hesse, Todd
Higgins, Chuck
Hodge, Patrick R.
Hook, Ryan
Hoover, Max

Houston, Colin
Huff, Zach
Hughes, James
Human, Steve
Hume, John
Iverson, Allen
Jacob, David
Jauron, Scott
Jay, Jerry
Johansson, Alan
Johnson, Bret
Johnson, Bron
Jones, Randall
Kash, Stella
Katrena, Scott
Keenan, Pete
Kirk, Jeremiah
Klinger, Martin
Kneaper, Jason
Kuhnke, Joel
Kunders, Aaron
Lake, Ronald
Larman, Dan
Laymon, Mark
Liebelt, Levi J.
Lund, Darrell
Lund, David
Maine, Mike
Malley, Susan
Mangini, Jered
Marshall, John

Martin, Tim
Mason, John
McAllister, Rachel
McCauley, Larry
McClenathan, Mike
McFadden, Tim
McKeivitt, John
McTeague, Kyle
Meigs, Gilbert
Merritt, Steve
Merry, Mark
Miller, Paul
Mitchell, Joe
Moniz, Garrett
Montgomery, Martin L.
Mooney, Ronald
Morris, Brady S.
Naught, Lester
Noah, Jim
O'Reilly, Mike
Owens, Rebekah
Parent, Kenny
Patch, David
Pendell, Keith
Perry, Richard
Piccolotti, Jim
Pinson, James
Porter, James
Powers, Ron D.
Rapelje, Chuck
Rettke, Tim

Robertson, Donald
Sander, Faye
Sannar, Todd
Savey, Brian
Schmidt, Lonny
Schmittle, William L.
Schnell, Kent T.
Schroeder, Michael
Scowden, Mark
Seelye, Shawn
Sellers, Ricky
Selshanko, Alexei
Sheppard, Neal F.
Sherlock, Christopher
Simenson, Donald J.
Simmons, Edward
Smith, Craig
Smith, Larry
Smith, Randall
Snegirev, Pavil
Sollee, James
Stark, Chris
Starnier, Steve
Steele, Mark
Steidler, Matthew B.
Stevens, Bret
Stevens, Pamela
Stinnett, William
Stone, Brian
Stonesifer, Vincent T.
Strassner, Bob
Tabrum, Walter
Thayer, Bradley
Thompson, Jake
Thompson, Kamen
Thompson, Matt
Thomson, Henry
Tilander, Tim
Todd, Carolyn
Tupper, Sean
Turner, Susan
Vatland, Mel
Verley, Christopher
Violette, Jeff
Waldron, Timothy
Wallace, Neal
Wanner, Ron
Warwick, Gordon Jay
Weaver, Rick
Wenzl, James T.
Wheatley, James
Whitlock, George
Wilson, Daniel
Wilson, David A., Jr.
Wolfe, Chad
Wolford, Paul
Woodall, Ken
Woodward, Steve
Woody, Max
Yap, Anita

ASSOCIATE MEMBERS

4B Engineering & Consulting
Abbey Systems, Inc.
Advanced Control Systems
Advantage Precast Inc.
American Flow Control
American Leak Detection
Anderson Perry & Associates
Backflow Management, Inc.
(BMI)
Bancorp Insurance
BergerABAM
BioLynceus, LLC
Branom Instruments Co.
Cascade Columbia Distribution
Co.
Ch2M Hill - Dallas
Ch2M Hill - Lebanon
CIMCO Sales and Marketing

CoBank
Consolidated Supply Co.
Corix Water Products
Correct Equipment, Inc.
CUES
Ditch Witch Northwest
DN Tanks
Edge Analytical Laboratories
EJ
Engineering America
Enviro-Clean Environment, Inc.
Ferguson Enterprises
Frank J. Martin Company
Furrow Pump, Inc.
GC Systems, Inc.
General Pacific, Inc.
HACH Company
HD Fowler Company, Inc.

HD Supply Waterworks
Hydra-Stop
Instrumentation Northwest,
Inc.
Itron, Inc.
Jordan Ramis PC
Kamstrup Water Metering
Kennedy/Jenks Consultants
Lakeside Industries/EZ Street
League of Oregon Cities
LiquiVision Technology, Inc.
M & H / Kennedy Valve
Master Meter, Inc.
Mueller Company
Nelson Environmental Inc.
Neptune Technology Group
Olson Engineering

Oregon Business Development
Dept.
Oregon Meter Repair
Oregon Public Utility
Commission
Owen Equipment Company
OXARC Inc.
PACE Engineers, Inc.
Pittsburg Tank & Tower Co.
Pollardwater.com
Public Works Supply
PumpTech Inc
RH2 Engineering Inc.
Romac Industries, Inc.
Schneider Water Services
Schoen's Motors
Schroeder Law Offices, PC
Sensus USA

Special Districts Assn of
Oregon
Taylor Made Pump Stations
The Automation Group
The Ford Meter Box Co., Inc.
The Sherwin-Williams Company
Titus Industrial Group, Inc
TMG Services
Tripac
Umpqua Research Co.
USABluebook
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Waterlab Corp
Wonderware PacWest
Xylem Dewatering Solutions
Xylem, Flygt Products

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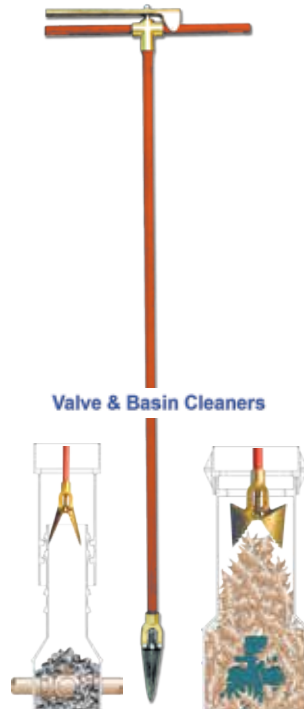


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