



H₂Oregon

Winter 2023
Vol. 45, No. 1

A publication of Oregon Association of Water Utilities
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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
503-845-9499 fax: 503-845-9202
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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

Influential Habits

by Jason Green, Executive Director



Leadership practices and behaviors result in some manner of influence. Leaders desire or should, that those they are charged with willingly follow, but often the challenge is how does a leader cultivate the desired willing response? This brings to mind the two basic facts of leadership – there is the “position” and the “person” in the position and much of what problems are about begin with the boss as he or she sets the cadence for others. There are many studies, and both experienced and some not-so-experienced opinions regarding this age-old subject of leadership influence.

Positive influence of a leader often has depth of effect and long-term impact on us. Some of these influences cause us to respect, admire, like, want to be like our leaders and motivate us. We do not often consider the true value of a leader who has the emotional intelligence and who places an extremely high value, seen in action awareness and focus, upon their staff relationship and attention to staff, their growth and success. The following sample of qualities and practices are worthy of contemplation for the experienced leader and those considering or working towards a leadership position.

Influential Leaders:

Are approachable. This leader knows that every employee is valuable, regardless of rank or ability. They value our time, input and questions and advice. This often self proclaimed quality, if exhibited, can further motivate us to work right, harder.

Form personal connections with us, building trust, helping motivate. We know they believe we are important and not just a number. They are able to communicate with words and most importantly, exemplify their words and connection with us by their consistent actions.

Are humble and give credit and appreciation when and where due at the appropriate level. The humble leader does not make everything about “them” and often attempt to avoid the spotlight. Arrogance and the practice of its all about “me” kills respect and motivation in others quickly.

Practice being positive and trustful first. Saying no is different than being negative, though it is generally a negative response. Being positive is more relative in how we think and then is displayed in action and attitude. Connecting trust with being positive may be questioned, but consider how a negative attitude regularly corresponds with someone who distrusts. We often see others as we think – it is the discerning leader who is able to move beyond this shortcoming. This is not to say the leader should not question or verify or say no, it simply challenges the leader to first consider yes and trust before we know the full story. Conclusions are best timely without any jumping. Negative people do not appreciate those who are positive and interestingly, positive folks can easily identify negativity.

Are even-keeled. Following someone who is a regular emotional basket case, moody, prone to fits and outbursts is a challenging task! A calm boss, even gentle, is someone greatly appreciated and often admired for their restraint and self-control. They may be an extrovert, animated or “A” type personality, but consistently prove to be steady and able to take things in stride with grace.

Are generous. I am guessing most of us have had the experience of working with someone who withholds, doesn’t share, keeps valuable information or resources to themselves whether for power, control, to manipulate, afraid someone might outshine them or out of plain meanness. A leader or co-worker who cares for others and wants others to win, shares, is generous and practices unselfishness. It is refreshing to know that your boss places a very high priority in your success. Generosity is a quality that builds trust, satisfaction and pride.

Hoping these few qualities cause further considerations of our mental views, attitudes and our practices as seen by others, and how we might influence others in a positive way. We will add to this list in the future. Best wishes. 💧

UPCOMING CONFERENCES

45th Annual Management & Technical Conference
Sunriver, March 6–10



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Seaside, August 21–24



2023 Fall Operators Conference
Florence, September 11–14



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Grand Ronde, Oct. 31–Nov. 2



Annual End of Year Operators Conference
Hood River, December 11–14



MARK YOUR CALENDAR!

Home Ownership

by Mike Collier, Deputy Director/Source Water Specialist



When we buy a home, we are usually very excited, but also may have a little buyer's remorse because of the amount of money and the long-term debt we have just signed up for. Sometimes you buy a house and immediately something goes wrong, water heater goes out, and maybe there is already some general maintenance that needs to be attended to — all the moss on the roof. Then as time progresses, more items break, microwave dies and more maintenance that needs attention, the house needs a new coat of paint.

Fixing these items and maintaining the house are all time consuming and costly but are necessary if you want to live in a useable, comfortable home. Some small amount of failure can end to be very costly, pipe starts to leak, but you don't know, then a little sheet rock tape begins to peel downstairs. Before long you need to replace a few pieces of sheet rock and have black mold starting behind the wall, but you still are tracing the leak back, because it is actually from a pipe upstairs, but is running along a pipe all the way to where it is coming out on sheetrock downstairs.

The type of care and concern we need for our homes we should also have at the water or wastewater system; the same principals apply. It is an expensive, long-term investment that needs a lot of yearly general maintenance and some long-term maintenance plans. Each staff member that comes on has inherited the good and bad things from the previous "owner," and finally there are failures that still can occur that were not foreseen.

Do we have the short term and long-term plans ready for the utility? Have we done the necessary maintenance? Do we know what parts are getting old? Do we have a way to quickly fix it when a failure occurs (phone numbers to find the needed part, or the part ready to go on the shelf)? These are all important things to consider, especially as winter falls upon us and everything gets colder, wetter, darker, and more difficult to fix. 💧

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Wasting Away!

by Monty Norris, Wastewater Technician



What's the best way to eliminate excess biosolids? It depends! Creating biosolids is technically treatment. Take too much out and there may not be enough treatment to treat the incoming solids (AKA food); leave too much and there is not enough food for the activated sludge to survive or at least the preferred biology because some (dreaded filaments) will get food before the others. We try to maintain a balance that targets and optimizes plant process to create the best quality effluent water to the receiving waters or for land irrigation. It's easy to say just follow the standard parameters... but wasting, as we all know, can be a plant's bottleneck! What are our options? Let's explore a few.

Belt filter presses typically will see 16% solids from activated sludge, but it can be as low as 12% and high as 20%. If running anaerobically digested sludge it can be 24%-35% sludge cake. It's all dependent on the solid content coming in and properly mixing/dosing the polymer.

I place dryers behind the belt press because it is usually a post belt press. A belt press is generally fed into a hopper to be fed at a specified rate into the dryer and held at a temperature that will create a roughly 90% or higher solid and meet class A solids with time/temp. The footprint needed to store these solids for summertime application is usually minimal and can be loaded for the farmer or applied, however if a customer is loaded at the plant facility the plant is less responsible.

Screw presses will typically produce a higher % solids (15%-22% on activated sludge) than a belt filter press but are a more costly investment up front. Just the same as the belt press is, all dependent on the quality of solids coming in.

Gravity belts will create 2%–10% solids and are usually being sent to a holding tank to be applied as field application after going through a SOUR process or Lime Treatment to achieve at least class B solids. These could also be dosed with polymer and applied to drying beds for further dewatering, sent to dewatering roll-off containers or dewatering bags. These dewatering containers can provide 5%–20% solids, so may be a viable option for your plant or a temporary or emergency situation.

Anaerobic digestion is a treatment process that is used on organic materials, such as sewage sludge. Microorganisms naturally break down these materials in a tank that lacks oxygen to create an energy-rich biogas. Typically, this will create class "B" solids for land application.

Aerobic digestion occurs much faster than anaerobic digestion. The process is usually run at ambient temperature and the process is much less complex and easier to manage than anaerobic digestion. These will typically need to be lime treated or go through SOUR which requires a lot of time.

Both these processes can be very expensive and still need to be dewatered unless being land applied.

Lagoons can manage to run a long period of time (up to 20 years or more depending on the size of lagoon)

before needing to be dredged. Many lagoons are currently adding an additive to help with the breakdown of solids with success by increasing solids degradation. When it is needed, the cost of dredging may vary greatly, however if funds were set aside and budgeted, then there shouldn't be a problem.

Hauling solids is the next thing to keep in mind when dewatering solids. How or who is going to haul the solids to the landfill? Obviously hauling yourself is the most inexpensive, but not always a possibility so then it is either a local sanitation company or a private company hauling, which can add up fast. Dewatering seemed inexpensive until the hauling bill shows up. Private companies that provide solids dewatering and hauling from digesters or holding tanks can be an expensive option and sometimes is the only option or for times of emergency.

Composting is becoming more and more talked about and larger municipalities are giving it a go successfully.



Time, Temp, ratio of carbon to nitrogen, air, and voila you're off and running, right? There are a lot more steps to it which make it more rocket science than simple gardening practices. It has been a publicly accepted compost and gardening amendment, so much, that they are selling it rather than giving it away and the piles are empty which mean no hauling fees.

In the end, what works for one plant may not work for another plant. Does it create more unaffordable labor? Do we have enough land? Is it unnecessary to create class A vs class B? Do we have the capacity to hold and land apply a 4% solid vs creating a 16% solid and going to a landfill—and is it cheaper when calculating the cost of labor, fuel, and equipment?

There are too many variables to make a quick decision without doing all the homework based on your facility and ability. When and if you decide to change, it would be best to take time to consider all the variables. ♦

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Chlorine Disinfection for Wastewater

by Keith Bedell, Wastewater Technician



What kind of chlorine disinfection do you use for your wastewater? I am mainly talking about the liquid bleach and solid tablets that people are currently using. How simple is your system? I have seen where potable water under pressure is fed into a tank with pellets or tablets. This system has a pressure reducing valve and a float switch to control the level of the water that is eroding the solid chlorine. Then water flows into another tank with a specialized pump to feed it into a wet-well connected to the chlorine contact chamber.

Another system used water as a mover through a venturi system that sucked the 12.5% bleach from a 55-gallon drum into the feed water going to the chlorine contact chamber. One of the problems with this type of feed system was that crystals would build up and reduce the flow of the mixed chlorine water to the contact chamber. The system had to add CO₂ to the system so the crystals would not build up and hamper the delivery of disinfection water, so the effluent would be treated to permit requirements for beneficial reuse. This system also had a glass rotameter for controlling the flows which had to be periodically cleaned. After using this system for a while, the utility decided to try a different approach that was simpler. They installed a peristaltic pump on the wall with the suction line in the 55-gallon drum of bleach which was pumped directly into the chlorine contact chamber without any quality loss of the bleach, and this provided a simple solution for their process.

For disinfection of treated effluent for beneficial reuse as irrigation water on a crop to be harvested, it must meet at least class “C” requirements. “Class C recycled water it must be oxidized and disinfected with the Total Coliform not to exceed a median of 23 total coliform organisms per 100 mL, based on the last 7 days that analyses have been completed” (DEQ permit requirements). Unlike stream discharge of treated effluent, there isn’t a requirement to reduce the amount of chlorine in the irrigation water, just the reduction of Total coliforms and, depending on the quality of water that is being treated, you might have to maintain a residual of 5mg/L of total chlorine.

Another simple setup for disinfection of recycled water is using Calcium Hypochlorite tablets which are approximately 70% available chlorine and come in small ¾ inch up to 3-inch discs depending on the manufacturer. This type of system has a flow through holding tank where the tablets are placed with the recycled water flowing over them causing the slow erosion of the tablets releasing the chlorine. Fresh water can also be used to dissolve the tablets producing a chlorine solution that is run into the chlorine contact chamber or basin for the disinfection process. I personally like to keep things simple no matter what the process. There is less maintenance, fewer parts to break down, and keep supplies to keep on the shelf. It is also easier to trouble shoot a system that only has a few operational parts than one that has all different kinds of equipment to maintain or troubleshoot. I would like to adhere to the following principle and hope everyone else would to a point, keep it simple, stupid (KISS) is a design principle which states that designs and/or systems should be as simple as possible. Wherever possible, complexity should be avoided in a system. 💧



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Safety in Confined Space



by *Tim Tice, Projects Manager*

Rules for confined spaces, if not for the internet, would be a subject lost in the weeds.

These rules are described in the Oregon Administrative Rules in Division 2, Subdivision J, the section for General Environment Controls, which—when someone opens the document—the subject “sanitation for the workplace” is the first topic. It is not until you move towards page 23 of Subdivision “J” when you will begin to see rules governing confined spaces.

Most sets of rules begin with the “purpose and application,” followed by “exceptions,” then “definitions.” With any subject matter, or industry, comes with a specific lingo that needs to be learned and the definition part of the rules is a great place to start.

Confined space rules are not too complicated and to ensure compliance with them, there are many checklists developed by agencies, organizations, and universities that are free to view and use. Oregon OSHA supplies a self-inspection checklist offering an ability to review the effectiveness of your current program. Said checklist delves into many of the uncommon rules and practices, which may or may not apply to your facility.

Reading through several confined space written programs has expanded my understanding of the topic—yet full understanding can be daunting. A thorough approach is to match each point from a checklist to the same point in your written program, even answering “not applicable” when an item doesn’t apply.

Hot work, or “welding,” may never be a part of the tasks associated with your workplace in a confined space, but it should be addressed in the written program. An anomaly for welding includes an additional set of rules found in 437-002-0279, which is preceded by CFR (Code of Federal Regulations) 29-1910.252.

We are not expected to know all the rules associated with safety, but most of the time reviewing a checklist will create questions as they relate to your existing written program and none-the-less, we are responsible to adhere to the rules. Key areas usually forgotten are:

- Lock-out / Tag-out procedures that may/may not be necessary
- Trained rescuer on-site during the entry, immediately available, when it is required
- Timeline for atmospheric testing equipment to be calibrated
- Back-up equipment, focus on battery powered tools and lighting

Overlooked issues that deal with confined space work is the assumption workers understand their positions when they do not. To help with worker

understanding we can train all positions at the supervisor level. While on-site, the title of each crew person is still the same but being able to question each other will raise the job site awareness level of everyone.

Training documentation is important because, if an action is undocumented, that action did NOT happen.

Another point on confined space work is fall protection. If falling is the only hazard, then the space is not considered confined. But if a confined space also has a potential fall hazard, this hazard must also be addressed in the written program, as well as on the permit itself.

During routine review of the current written program, we should see that it aligns with the rules and confirm the efficacy of the program, but training and employee understanding solidifies the program to a higher level. ♦

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Lead and Copper: Here



by Bob Waller, Water Circuit Rider

Many times when I am trying to come up with ideas for a magazine article, things just fall in my lap.

We had just returned from our national conference and had a couple of calls from systems that had questions about results from their lead and copper samples. Well, it just so happens we had a couple classes on this very subject. In the new lead and copper rule the action level has stayed the same at 15 ppb which we have been dealing with for years, but now they are adding a trigger level at 10 ppb which will put many systems at risk. There is even talk of lowering the action level to or below the trigger level to “simplify the rule,” haha.

Some expect the MCL violations for lead to increase up to 40%. This is just speculation, but I have looked at data online and using current results, many systems would have exceeded the trigger level. We can rest assured the number of calls on lead and copper will increase.

So, reading through the OARs pertaining to the lead and copper rule, I went through some of what is required when we do our normal lead and copper samples. We take our bottles and chain of custody forms to our customers to get our normal lead and copper samples. Maybe we're on a three-year schedule. We go through how to properly take the samples and hope for the best when we pick them up the next morning.

Under the current rule: when our results come back, we are required to share those results with the customers that were involved no matter the results. The customers that had results at or above the 15 ppb or 0.015mg/L we are also required to give them specific educational information on the health effects of lead and copper.

If we exceed the 90th percentile, the water system must provide educational material to all paying customers in the system. OAR 333-061-0034 (5). The number of samples that are taken or based on the number of people served in your system.

What is the 90th percentile?

Simply put, if we take 20 samples, we would arrange them from lowest to highest in the concentration of lead found and we would go nine-tenths of the



We Go Again!

way up that scale if we are still under the MCL the system is not in violation. In other words, with 20 samples, we could have 2 over the MCL and not be in violation; 10 samples we could have 1 over the MCL and not be in violation.

For systems under 100 people served, taking only five samples, you would take the average of the two highest results for compliance. There are many other actions we will have to take if this is our first lead exceedance; we can collect two 6 month rounds of lead and copper samples to demonstrate no lead issues. This must be done in conjunction with public education and evaluating appropriate treatment.

OAR 333-061-0034 (5) has the exact language required for the educational information and you are welcome to go through it and develop your own form. Much like having a boil water notice already formatted, it is also a good idea

Pre-formatted public education materials

For materials you can use to share information about lead testing, visit the site below and scroll down to the section **Lead and Copper Public Education Requirements**. Look for the **Lead in Drinking Water Public Education Brochure Template**, which is available as a Microsoft Word document or as a PDF for both community water systems and non-transient non-community water systems.

<https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/OPERATIONS/Pages/publicnotices.aspx#lc>

to have an educational form on file. The state has a form already formatted, so all we have to do is insert our specific information in and we are all set (see box above).

If lead is present above the action level, public education must be delivered to water users.

If you have questions or need more information, please contact OAWU. We are always here to help. 💧



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Better Communications

by Scott Berry, Operations Manager



Following the vein of my last article about communication, I thought it would be a good idea to cover another related topic for this article. This is a topic I have developed a, somewhat, tenuous relationship with over the years. My relationship started with writing patient care reports as an EMT, then preparing reports for a water utility board of directors and finally, the tenuous part, these quarterly magazine articles for the past 2 decades. These articles are admittedly not quite the same as a document intended to brief a board or council, but some of the aspects are similar.

Before I start a report like this, I always clearly define both the intent of the report as well as the target audience. As for the intent, the two most likely reasons are either to simply disseminate information or to inform them of needed expenditures. I follow these five steps:

- Know your audience! Every group of people bring with them their own preconceived notions, agendas, and pet projects. I present that fact as neither a negative nor a positive—it just is. Do your best to know what those personalities and issues are; it will help you greatly when we get to the last point below.
- State your position clearly and as succinctly as is prudent. Use language that clearly demonstrates what you need, why you need it, what it will cost, and what the pros and cons are.
- Be concise and map out specifically what you're proposing or what information you're sharing. Avoid tangents and rabbit trails. Never assume your audience will read between the lines. Provide a good flow of information and present it in a factual manner.
- Support your position with evidence, factual data, examples, and expert opinions. Try to keep emotion out while stating your position. If your position is met with an emotional response, don't get emotional when you in turn respond.
- Anticipate, prepare for, and respond to objections with clear and well-articulated answers. Do your homework and be as thoroughly knowledgeable of the subject as possible.

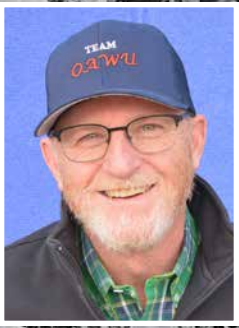
These steps will help to clearly get the message across whether in a boardroom or via any other method of information dissemination.

Hopefully this method will serve you as well as it has me in the past—and don't forget, if you ever find yourself staring blankly at a computer screen and past your deadline for a magazine article, you can always write an article about how to write an article. 💧



Beyond Expectation

by Hans Schroeder, Circuit Rider



I want to share an experience I had the other day. A product that I bought at a local store failed within a day of owning it. I decided to call the distributor of this product. I explained to them that it failed immediately. The customer service person stated that they were glad that I brought this to their attention and that they were going to pull this product off the market within the US. Customer service stated to go back where I purchased the item for a refund.

Now the story gets better. I go back to the store to discuss the issue and I was told that without a receipt the store could not return the item. I even had an email from the distributor stating that the store would give a full refund from the company. I left with the item figuring it was a mute point and that I just learned a lesson about keeping every receipt from every purchase I make. A few days later I get a follow up email from the distributor of the product asking how the transaction went with the local store. I replied that with no receipt the store would not take the return and that the store's customer service was very sub-par (I was very surprised when the distributor of the item actually followed up to find out if I was able to return the item to the local store). The distributor customer service emailed me and stated that she had contacted the store and gave a name of the manager for me to contact the next time I get to town. I then went back again to the retail store, and by golly, they knew my name as soon as I entered the store. The distracted, unhappy store manager had my refund promptly available this time (I felt that she just wanted to be done with me).

I was absolutely shocked at how the distributor went far and beyond my expectations, going out of their way to make sure my experience didn't go unnoticed and that the item got returned and replaced. I then followed up by emailing the distributor customer service to thank them for the great service provided.

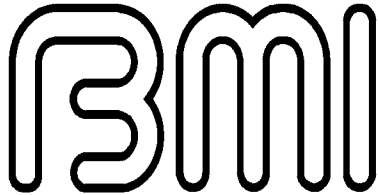
A simple question crossed my mind: "Do we go above and beyond in providing service to customers, users, citizens, council members or boards in our industry?" Making service a priority to our constituents. It takes a conscious effort to listen to the concern then to act on it clear to the end. 💧

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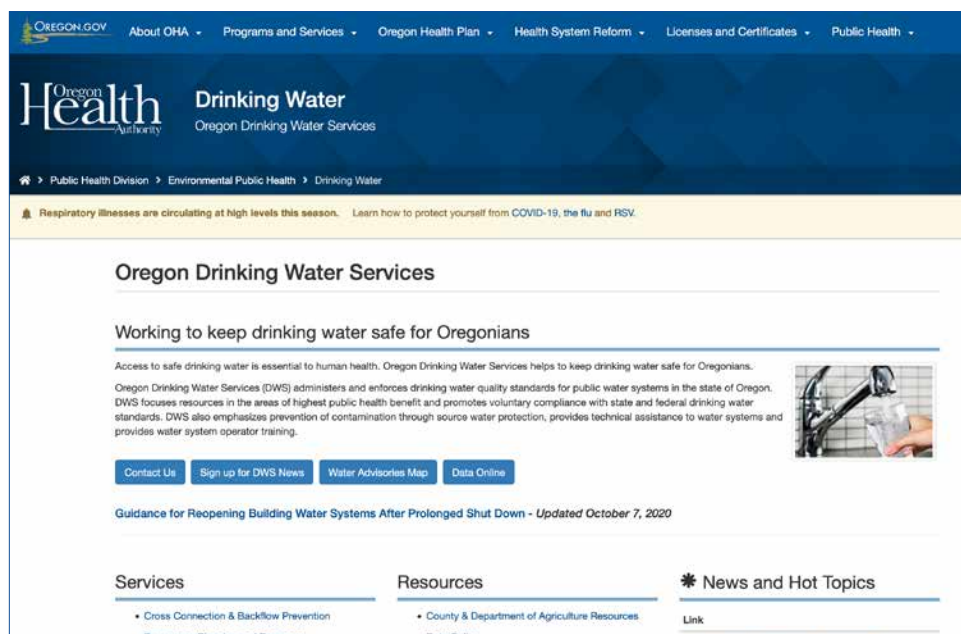


OHA DWS Website

Heath Cokeley, Programs Manager/Circuit Rider



How many of you are already using the Oregon Health Authority's (OHA) Drinking Water Services (DWS) website? My hope is the majority of water operators and board members for small systems that may only require an "S" level certification are already using the website. If not, or if you are only using it to look up what water samples your system is required to take, I would encourage you to get on the site and to look around for a bit as it contains a lot of good information. If you do an online search for "OHA DWP" the first option likely to appear is the drinking water services website.



There are few areas in this website that may be helpful.

First, and probably the most important part for a water operator, is the data online page. After you open the website, you will see four blue boxes in the middle of the page and the last one says, "data online." This link takes you into a page where we can look up any water system in Oregon. Click in the "Water System Search" icon and either type in part of the systems name, or if you know it, the system id number. My hope is this is review for most of you who likely already have this saved to your favorites because after you get into your system there is a lot of information that we can check on to make sure it is accurate. If we find things that are inaccurate, we can contact the DWP staff to get those things corrected. The top should have the contact person information as well as population, number of connections, system certification requirements, etc. Click on "certified operators," it will show all individuals and their license classification if they work for or are under contract for the system. Going down the main page it shows all the system's sources of water and below that the different types of treatment applied, if any. Next will be the consumer confidence report and then the Cross Connection section. Under the Cross Connection section will be another helpful area where

we can look up all the contacts, with a brief description of the conversation under “Contacts & Advisories” or the water sampling schedule under “Chemical Schedule Details.” There are a lot more sections and information you may find of interest here, but I just wanted to mention a few.

Back on the home page for DWS we see that the first blue boxes reads “Contact Us” which will give a staff directory to get in direct contact with a staff member. A little way under the blue boxes we see “Services” and “Resources” and I encourage you to click on the links below them to get more information. For instance, if we are trying to become a certified water operator, we would look under the “Services” and click on “Operator Certification” which takes us to a page that deals just with certification. If we click on the “New Certification” tab about halfway down that page, it shows all the things we will need to fill out to start that process. Going back to the home page again, look under “Resources” we see the “Rules & Implementation Guidelines” tab. At the top

of that page click on “Drinking Water Rules” we see all of Oregon Administrative Rules 333-061. Back on the previous page, we see information on Service line Inventory, as well as other things we may find helpful.

OK... at the end of this article, I realize it may not have been a super fun or exciting topic, and for those of you who are already very familiar with the DWS website it may not have been anything you weren't already aware of. My hope is that if you weren't aware of the website or haven't been on it for some time this article will encourage you to go explore it a bit and see what new resources the drinking water staff have provided, because at the end of the day, even though I may get frustrated when the website changes and I can't find what I am looking for, I do find this website a great resource to stay up to date on what is going on in water.

Thanks for taking the time to read this article, and with that I will see you down the road. ♠



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UPCOMING TRAINING & EVENTS

Date	Class Title	Location	CEU Information	ESAC#, Fee/Free
March 6–10	45 th Annual Management & Technical Conference	Sunriver	3.0 Water/Wastewater	TBA Fee
March 21–22	Wastewater Treatment/Collections Certification Review	Keizer	1.4 Wastewater/0.7 Water	4227 Fee
March 23	Distribution Basics	Scappoose	0.6 Water	4117 Fee
March 28	Math for Operators	Turner	0.4 Water/Wastewater	4329 Fee
March 28	Preparing for a W System Survey & WW System Inspection	Turner	0.3 Water/Wastewater	4330 Fee
March 29	Water & Wastewater Field Operations & Safety	Turner	0.4 Water/Wastewater	4636 Fee
April 4–5	Water Treatment, Water Distribution Certification Review	Keizer	1.4 Water/0.5 Wastewater/Onsite	TBA Fee
April 6	W. Treatment & Dist. Level 3,4 & Filtration Endorsement	Keizer	0.6 Water	TBA Fee
April 4	Lock Out Tag Out Operations	Turner	0.3 Water/Wastewater/Onsite	4397 Fee
April 4	Job Site Safety	Turner	0.6 Water/Wastewater/Onsite	4331 Fee
April 11	Math for Operators	Newport	0.4 Water/Wastewater	4329 Fee
April 11	Preparing for a W System Survey & WW System Inspection	Newport	0.3 Water/Wastewater	4330 Fee
May 3	Developing Your O&M Manual	The Dalles	0.4 Water/Wastewater/0.2 Onsite	4032 Fee
May 3	W&WW Emergency Response Planning	The Dalles	0.4 Water/Wastewater	4670 Fee
May TBA	EXPO	Rickreall	0.4 Water/Wastewater	TBA FREE
May 10	Understanding the Requirements of the WMCP	Salem	0.3 Water	4351 Fee
May 10	Leak Detection	Salem	0.2 Water/Wastewater	4396 Fee
May 24	Math for Operators	Redmond	0.4 Water/Wastewater	4329 Fee
May 24	Pumps & Pumping	Redmond	0.3 Water/Wastewater/Onsite	4395 Fee
June 6–7	Water Treatment, Water Distribution Certification Review	Salem	1.4 Water/0.5 Wastewater/Onsite	TBA Fee
June 27	Math for Operators	Hermiston	0.4 Water/Wastewater	4329 Fee
June 27	Pumps and Pumping	Hermiston	0.3 Water/Wastewater/Onsite	4395 Fee
July 25–26	Water Treatment, Water Distribution Certification Review	Redmond	1.4 Water/0.5 Wastewater/Onsite	TBA Fee
August 8–9	Wastewater Treatment/Collections Certification Review	Salem	1.4 Wastewater/0.7 Water	4227 Fee
August 9	Lock Out Tag Out Operations	Bend	0.3 Water/Wastewater/Onsite	4397 Fee
August 10	Confined Space	Bend	0.3 Water/Wastewater/Onsite	4634 Fee
August 10	Hazardous Communication Standard (Global Harmonization)	Bend	0.3 Water/Wastewater	4193 Fee
August 21–24	29 th Annual Summer Classic Conference	Seaside	2.3 Water/Wastewater	TBA Fee
September 11–14	2023 Fall Operators Conference	Florence	2.7 Water/Wastewater	TBA Fee
September 19	Distribution Basics	Baker City	0.6 Water	4117 Fee
October 11	Distribution Basics	Lake Oswego	0.6 Water	4117 Fee
Oct. 31 – Nov. 2	Spirit Mountain Casino Operator's Conference – 2023	Grand Ronde	2.0 Water/Wastewater	TBA Fee
November 8	Confined Space & Job Site Safety	Eagle Point	0.6 Water/Wastewater/Onsite	4331 Fee
November 28	Distribution Basics	Salem	0.6 Water	4117 Fee
November 29	Developing Your Operations & Maintenance Manual	McMinnville	0.4 Water/Wastewater/0.2 Onsite	4116 Fee
November 29	Leak Detection	McMinnville	0.2 Water/Wastewater	4396 Fee
December 11–14	25 th Annual End of Year Operators Conference	Hood River	2.7 Water/Wastewater	TBA Fee

Levels 1–4 Water Operator Exams

Trained and certified operators are necessary to ensure that the systems are managed in a manner that fully protects public health and the environment. The OARs for certification stipulate that the qualifying experience for applicants for certification as a water treatment plant operator must attain at least half the required operating experience at a public water purification plant that uses complex filtration technology and is not more than one classification lower than the level of certification they are seeking. In other words, if you have only worked for a Class 2 treatment plant, we allow you to apply for a Level 3 certification but not a Level 4 certification. If you move on to a Class 3 plant, then you must have ½ the qualifying experience (at the Level 3 plant) before allowing to apply for a Level 4 certification. Reciprocity from state-to-state ensures that the operator have the operating experience for which they are certified.

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

Drinking Water Data Online

<https://yourwater.oregon.gov>

Drinking Water Services

<https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/Pages/index.aspx>

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

For more information on any class by OAWU, please contact the office at 503-837-1212, office@oawu.net or visit www.oawu.net.

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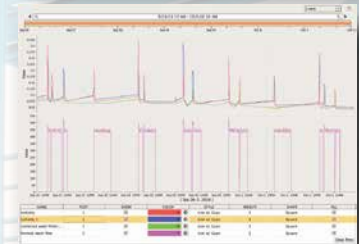
Operator Views

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- Supervisory control from operator views
- View and acknowledge process alarms
- Easy to use



Historical Trends

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Asset Management

- Avoid unplanned downtime
- Calendar and condition-based scheduling
- Maintenance work orders
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Mobile Access

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- View and acknowledge alarms easily
- Easy and intuitive to use



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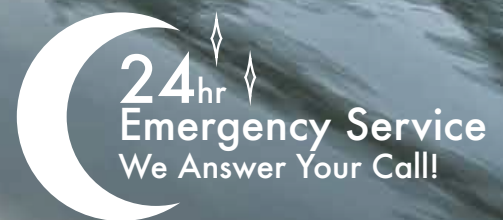
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QUIZ CORNER

CORRECTION

In the Fall 2022 issue, there was an error in Quiz Corner. One question asked you to calculate the flow through a filter in GPM when 1.8 million gallons flows through the filter during a 42hr run. The answer is 714GPM, but the answer key said 1,100GPM. We apologize for the error.

- During confined space work, the primary reason for violation is...**
 - Lack of training
 - Lack of role understanding
 - Training not documented
 - Training insufficient
- Lock-Out Tag-Out programs relate to how many various forms of energy?**
 - 8
 - 2
 - 7
 - 4
- Lock-Out Tag-Out programs relate to how many various types of energy?**
 - 8
 - 2
 - 7
 - 4
- Municipal wastewater is comprised of what percent of water?**
 - 80%
 - 90%
 - 97%
 - 99.9%
- What percent of homes use septic systems that may contribute to contamination?**
 - 4%
 - 8%
 - 11%
 - 19%
- Does 12.5% sodium hypochlorite have a higher or lower specific gravity than water?**
 - Higher
 - Lower
 - The same
 - It has no specific gravity
- To apply to take an Operator In Training or OIT exam for water certification, an applicant must have 3 months of operating experience, 3 months of water-related experience, or possess _____ CEUs of relevant water system training.**
 - 10
 - 3
 - 30
 - 45
- Your chlorinator room should have an exhaust vent installed _____.**
 - Near the ceiling
 - Halfway up the wall
 - Near the floor
 - In the ceiling

ANSWERS: 1-C, 2-B, 3-A, 4-D, 5-D, 6-A, 7-B, 8-C

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2.



3.

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Commencement

Throwing My Loop
by Michael Johnson

The word “commencement” is derived from the word “commence” which means “to begin.” Yet we use the word “commencement” to describe what happens at graduation. I find that fascinating. Why would we use a word that means “to begin” at the end of something?

Much to my surprise I have been asked to provide the commencement address to this year’s graduating class at the university I attended so long ago—Texas A&M University—Commerce, current enrollment of 10,000 students. When the invitation came—while I was certainly honored—I could not help but think all my old professors who are now in heaven (and all those who are not) must surely be so disappointed. “Do what?” they must have said when they heard the news. “Surely you could get somebody better than that fellow. Anybody but him.”

Nevertheless, I plan to take a stab at it. Like most people, not knowing about something has never stopped me

from giving advice on the subject. So, here’s what I plan to do...

At graduation ceremonies, the commencement speaker is supposed to tell all the graduating seniors—and their parents—things that are wise and funny, things that will “stick” with us as we begin our journey in life, and well, you know... things that are “smart.” Even though I don’t know anything wise, funny, or smart, I still plan to take a stab at it. It is a crying shame for those in attendance on that day that I could not have given this speech on the day I graduated from the university because on that day... I was smarter than I have ever been. Somehow—sadly—all that wisdom has evaporated in the last forty years, and where it went I haven’t a clue. Nevertheless, I still plan to take a stab at it. What I’ve decided to talk about is all the things I wish the speaker at my graduation had mentioned. Something like this...

“Good morning ladies and gentlemen. To all you graduating seniors, well done. And to all you moms and dads who lived through the ordeal of getting your kid through college...even more well done! Graduates, I am really impressed and happy for you that you have received your degree. All your life your parents have told you, “Work hard, go to school, make good grades, get a college degree, get a good job...then you can be happy! When we hear that all our life and we finally do it, we cannot help but think the hard part is over. Actually, there are a few more things you have to do. Here are some wise and funny and smart things for you to consider...

You will do better in life if you learn how to interact with other human beings. I’m sure not a single one of your college professors ever mentioned that, and I am at a complete loss as to why they did not. Yet, you can really help yourself if you learn to meet people, make eye-contact, learn how to shake hands, and remember people’s names. Don’t say you can’t remember names. If you can get a degree, you can learn how to remember names. I’m not suggesting you become a phony St. Bernard who jumps on people and slobbers all over them. We don’t like people who do that. But we do like people who are authentic, genuine and sincere...and people who are kind and nice and have something you may have never heard of ‘cause its kinda’ out of fashion these days. Charm and manners. We are all impressed by those qualities. Develop them.



Cowboy up. That is a term we use in the rodeo world that means when you get bucked off—when you are high in the air and about to land on your back in the middle of the arena in front of all those people—start making plans to get up before you ever hit the ground. That is the most important skill you can develop—and you better develop it. Because no matter how high your grade point average is, no matter how perfectly you have lived so far...once in a while, life is still gonna kick you right in the teeth. Might be the loss of a loved one, death of a good roping horse, fire, tornado, broken heart, or divorce—whatever it is, there will come a time when life hurts so bad, you cannot breathe. Unfortunately, at these times you will find that your college degree does not help one bit. I have never found anything that does. If you do, call me collect.

Well, maybe I have found one thing that does. And that is, to remember when things go bad...cowboy up. Hang on. To remember we are stronger than we think. We are more than we know. We have not been short-changed by the Spirit. Let some time pass. You will laugh and dance again.

Finally, remember what Anne Frank wrote—that 14-year old girl hiding in the attic from the Nazis:

“In the long run, the most powerful weapon of all is a kind and gentle spirit.”

In your life you will find nothing works better with children, with horses, or with the person you are married to. Best thing I ever read.

So that’s about it. That’s all the wise, funny, smart things I have to say. Commencement is not the end. It’s just the beginning.

I simply cannot believe they allowed someone like me to come and talk to all of you. I’m grateful.

I wish you well.

Be sure and thank your momma and your daddy for this day.

God help you. I know He did me. ♦

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Phone: _____

Contact Person: _____

Number of Hook-ups: _____

Were you referred? By whom _____

Type of System:

Water Wastewater Both

Membership Category Membership Dues

- | | |
|--|--------------------------------|
| <input type="checkbox"/> Regular Member | \$ _____
See schedule below |
| <input type="checkbox"/> Associate Member | \$550.00 |
| <input type="checkbox"/> Individual Member | \$100.00 |

Regular Member Dues Schedule

1 to 100	\$75 + 45 cents per connection
101 to 500	\$85 + 45 cents per connection
501 to 1,000	\$90 + 45 cents per connection
1,000 and up	\$100 + 45 cents per connection
Maximum dues is	\$1,350.00

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935 N. Main St., Independence, OR 97351
or email: office@oawu.net or fax: 503-837-1213

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 Regular Member Dues Schedule

Associate Member

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. Annual Dues \$500.00 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 \$100.00 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 about upcoming training courses in your area
- 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
- Positive contacts with other organizations
- Camaraderie with water and wastewater professionals
- Operator Of Record services
- Job referrals, announcements and searches
- Well testing, plan review, rate studies, WMCP plans
- System performance evaluation and options
- Additional programs and services
- Disaster response assistance and planning



MB23



MEMBERS



62nd Court Mutual Water Company
 Adair Village, City of
 Adams, City of
 Adrian, City of
 Agate Water System
 Albany, City of
 Albany Rifle & Pistol Club
 Alfalfa Water LLC
 Alpine Crest Improvement Dist.
 Amity, City of
 Ananda Center at Laurelwood, Inc.
 Arch Cape Water & Sanitary District
 Arlington, City of
 Arrah Wanna Water Company
 Arrowhead Mobile Home Park
 Aspen Lakes Utility Company, L.L.C.
 Astoria, City of
 Athena, City of
 Aumsville, City of
 Aurora, City of
 Avion Water Company
 Baker City, City of
 Bandon Dunes Resort
 Bandon, City of
 Banks, City of
 Barlow Water Improvement District
 Barlow, City of
 Bay City, City of
 Bay Hills Water Association
 Bayou Water Improvement District
 Beaver Water District
 Beaverton, City of
 Bend Research Inc.
 Bend, City of
 Benton County Service District
 Bents Court Water Co.
 Berndt Creek Water Corp.
 Beverly Beach Water District
 Biggs Service District
 Black Butte Ranch
 Black Mountain Water District
 Blue River Water District
 Blue Spruce 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
 Brightwood Water Works
 Brooks Community Service District
 Brownsville, City of
 Buell-Red Prairie Water District
 Bunns Village Properties, LLC
 Burlington Water District
 Burns, City of
 Burnside Water Association
 Butte Falls, Town of
 Camp Baker BSA
 Camp Rilea
 Canby, City of
 Canby Utility
 Cannon Beach, City of
 Cannon View Park, Inc.
 Canyon City, Town of
 Canyonville, City of

Carlton, City of
 Cascade Locks, City of
 Cave Junction, City of
 Cedarhurst Improvement Club, Inc.
 Central Coast Clean Water Company
 Century Meadows Sanitary System, Inc.
 Century Meadows Water System, Inc.
 Charles Tracts Water Company
 Chart Water Supply, Inc.
 Chehalem Mt. Sun Ridge Association
 Chenoweth Water PUD
 Chiloquin, City of
 CHR Dist. Improvement Co.
 Christmas Valley Domestic Water
 Cimmaron City Water Co., Inc.
 Circle C Improvement Dist.
 Clarks Branch Water Association
 Clatskanie, City of
 Clayton Creek Water Association
 Clean Water Services
 Cline Falls MHP
 Cloverdale Sanitary District
 Cloverdale Water District
 Coburg, City of
 Collins Products LLC
 Colorado Lake Co-Op
 Colton Water District
 Columbia City, City of
 Columbia Hills Homeowners Association
 Columbia River PUD
 Condon, City of
 Coquille, City of
 Corbett Water District
 Cornelius, City of
 Corvallis Waldorf School
 Cottage Grove, City of
 Country Club Water District
 Country View Mobile Estates
 Covanta Marion, Inc.
 Cove Orchard Water Association
 Cove, City of
 Crater Lake National Park
 Crescent Sanitary District
 Crescent Water Supply & Improvement District
 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
 Deer Creek Estates Water Association
 Delphian School
 Depoe Bay, City of
 Deschutes Valley Water District
 Detroit, City of
 Dexter Oaks Mobile Home Park
 Dexter Sanitary District
 Diamond Peaks at Leisure Woods I&I
 Diamond Summit Association
 Dietz Airpark Water System
 Donald, City of
 Drain, City of
 Drifter's MHP
 Dry Creek Airpark HOA, Inc.
 Dufur, City of

Dundee, City of
 Eagle Point, City of
 East Yamhill Rural Water Company
 Eastmont Water Company
 Eastshore Water Improvement District
 Echo, City of
 Elgin, City of
 Elkton, City of
 Emerald Meadows HOA
 Emerald Valley Wastewater Co.
 Enterprise, City of
 Estacada, City of
 Estacada Mobile Village, Inc.
 Eugene Mobile Village
 Fairview Water District
 Fairview, City of
 Falcon Cove Beach Water District
 Falcon Heights Water & Sewer District
 Fall Creek Water District
 Falls City, City of
 Fern Ridge School Dist. 28J-10
 Fern Valley Estates Improvement Dist
 Fernridge Mobile Estates
 Fir Grove HOA
 Fir View Water Company
 Fishhawk Lake Recreation Club, Inc.
 Florence, City of
 Forest Park Mobile Village
 Fossil, City of
 Garden Valley Water Association
 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
 Glendale, City of
 Gleneden Sanitary District
 Glenmorrie Co-op Association
 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 Ronde Sanitary District
 Grants Pass, City of
 Grass Valley, City of
 Green Area Water & Sanitary Authority
 Green Oaks Park
 Greenhoot Properties
 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 PUD
 Helix, City of
 Heppner, City of
 Hermiston, City of
 Hidden Valley Improvement District

High Lostine Owners Association
 Highland Subdivision Water District
 Hiland Water Corporation
 Hillsboro, City of
 Hines, City of
 Hood River, City of
 Hopewell Water Co.
 Hubbard, City of
 Hunnell Hills Community Water System
 Huntington, City of
 Ice Fountain Water District
 Idanha, City of
 Idleway Improvement District, Inc.
 Imbler, City of
 Independence, City of
 Indian Meadow Water Company
 Inn at Otter Crest
 Interlachen Water PUD
 Ione, City of
 Irrigon, City of
 Island City, City of
 Jackson County Parks
 Jacksonville, City of
 Jasper Knolls Water District
 Jewell School District
 John Day Water District
 John Day, City of
 Johnson Creek Water Services Company
 Joseph, City of
 Junction City, City of
 Keizer, City of
 Kellogg Springs Camp
 Kelly's Brighton Marina, LLC
 Kelso Water Association
 Keno Water Company, Inc.
 K-GB-LB Water District
 Kilchis Water District
 Kingswood Heights Water Association
 Klamath Falls, City of
 Klippel Water System
 Knappa Water Association
 Knoll Terrace Park
 L.A. Water Cooperative
 La Pine, City of
 Labish Village Water Commission
 Lady Creek Water System
 Lafayette, City of
 Laidlaw Water District
 Lake Creek Lodge
 Lake Grove Water District
 Lake of the Woods Resort, LLC.
 Lake Oswego, City of
 Lakeside Water District
 Lakeside, City of
 Lakeview, Town of
 Lakewood Homeowner's, Inc.
 Lamb Weston
 Lamontai Improvement District
 Lamplighter Water Association
 Lane County Parks
 Langlois Water District
 Laurelwood Water User's Co-op
 Lawrence Subdivision Water Assn., Inc
 Lawson Acres Water Assoc.
 Lebanon, City of
 Lexington, Town of
 Lincoln City, City of



MEMBERS



Little Beaver School, Inc.
 London Water Co-op
 Long Creek, City of
 Lostine, City of
 Lowell, City of
 Luckiamute Domestic Water Co-op
 Lusted Water District
 Lyons-Mehama Water District
 Madras, City of
 Madrone Hill Mobile Home Park
 Madsen Springs Water Assn.
 Malin, City of
 Manzanita, City of
 Mapleton Water District
 Maupin, City of
 McKay Acres Improvement District
 McKenzie Palisades Water
 McMinnville Water & Light
 McNulty Water PUD
 Merrill, City of
 Metolius Meadows Prop. Owners Assn.
 Metolius, City of
 Midland Water Association
 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
 Moro, City of
 Morrow Commission, Port of
 Mossy Brae Water District
 Mt. Angel Abbey
 Mt. Angel, City of
 Mt. Ashland
 Mt. Bachelor, Inc.
 Mt. Shadows HOA
 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.
 Newberg, City of
 Newport, City of
 North Corvallis Mobile Home Park
 North Hill Water Corporation
 North Powder, City of
 Northwest Newberg Water Association
 Nyssa, City of
 Oak Lodge Water District
 Oakland, City of
 Oakridge, City of
 Oakwood Water Systems, Inc.
 Oceanside Water District
 Ochoco West Water & Sanitary Authority
 Odell Sanitary District
 Olney-Walluski Water Association
 OPRD Main Office - Salem
 Orchard Heights Water Association
 Oregon Cascade RV Co-op.
 Oregon Shores Beach Club, Inc.
 Oregon Shores II
 Oregon Water Utilities-Cline Butte
 Oregon Water Utilities-Mtn. Lakes
 Oregon Water Wonderland II Sanitary District
 Orient Drive Mobile Estates, LLC
 Otter Rock Water District
 Pacific High School
 Paisley, City of
 Paradise/Rogue Meadow WS
 Parkdale Water Company, Inc.
 Perrydale Domestic Water Association
 Philomath, City of
 Phoenix, City of
 Pilot Rock, City of
 Pine Grove Water District
 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 Orford, City of
 Port of Columbia County
 Power City Water Co-op
 Powers, City of
 Prairie City, City of
 Prineville, City of
 Quincy Water Association
 Rainier, City of
 Red Hills Estates HOA
 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
 Rieth Water & Sanitary District
 Rimrock West Improvement District
 River Meadows Improvement District
 River Point Farms, LLC
 Riverbend-Riverbank Water District
 Rivergrove Water District
 Riverside Water District
 Roats Water System, Inc.
 Rock Creek Water District
 Rockaway Beach, City of
 Rockwood Water PUD
 Rocky Pointe Marina
 Rogue Community College
 Rogue Lea Estates MHP LLC
 Rogue River, City of
 Rogue River - Siskiyou National Forest
 Roseburg Forest Products Company
 Round Lake Water Utilities
 Rufus, City of
 Salem, City of
 Salishan Sanitary District
 Salmon Valley Water Company
 Sandy, City of
 Scappoose, City of
 Scio, City of
 Scotts Mills, City of
 Scravel Hill Water Co-op
 Seal Rock Water District
 Seaside, City of
 Seneca, City of
 Shadow Hills Park Water Cooperative
 Shangri-La Water District
 Shelley Road Crest Acres W.D.
 Sheridan, City of
 Sherwood, City of
 Siletz Community Water System
 Siletz, City of
 Silver Falls School District 4J
 Silverton, City of
 Sisters, City of
 Skylane Farm
 Skyview Acres Water Company
 Sleepy Hollow Phase 1 Water
 Sodaville, City of
 South Fork Water Board
 South Hills Water System, Inc.
 South Umpqua Water Assn.
 Southview Improvement District
 Southwood Park Water District
 Spirit Mountain Gaming, Inc.
 Sportsman's Park Water Association
 Spray, City of
 Springwater Estates HOA
 St. Paul, City of
 Staffordshire Water System, Inc.
 Stahlman Summer Homes
 Stanfield, City of
 Star Satellite Improvement District
 Stayton, City of
 Steeves Mobile City
 Storlie Water Company Inc.
 Sublimity, City of
 Suburban East Salem Water District
 Sumpter, City of
 Sun Mountain Water System
 Sunny Acres Water Co.
 Sunridge Estates
 Sunrise Water Authority
 Sunriver Water LLC/Sunriver Utilities
 Sunset Acres Water Company
 Sunset Hills Domestic Water Assn.
 Sunset Lake RV Park
 Sunset Water Systems, Inc.
 Sunshine Village Water Association
 Sutherlin, City of
 SW Lincoln County Water PUD
 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 County Creamery Association
 Tillamook, City of
 Timber Water Association
 Toledo, City of
 Tollgate Water Company
 Tone Water
 Tooley Water District
 Trailer Park Village
 Trappist Abbey
 Tri City Water & Sanitary Authority
 Troutdale, City of
 Tualatin Valley Water District
 Tualatin, City of
 Turner, City of
 Twin Island Community Water
 Twin Rocks Sanitary District
 Tygh Valley Water District
 Ukiah, City of
 Umatilla, City of
 Umatilla Indian Conf. Tribes Reservation
 Umpqua Basin Water Assn.
 Umpqua Indian Utility Co-op
 Union, City of
 Vale, City of
 Valley View Water Co-op
 Valley View Water District
 Valley Vista Estates Water Improv. Dist.
 Veneta, City of
 Vernonia, City of
 VIDA-LEA Community Co-op
 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
 Wedderburn Sanitary District
 Weiss Estates Water System
 Welches Water Company
 Weldon Mobile Home Park
 West Hills Water Company
 West Linn, City of
 West Slope Water District
 Western Heights Water Association
 Westfir, City of
 Weston, City of
 Westport Water Association
 Westridge Water District
 Wheeler, City of
 Wickiup Water District
 Willamette Water Company
 Willamina, City of
 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
 Young's River Lewis & Clark WD
 Zig Zag Water Cooperative, Inc.

WELCOME, NEW MEMBERS!

Salishan Sanitary Board	Emerson Contracting	John Tipsword	McFall, Lester	Richard Adams	Duncan Reid
NSR Pogo Mine Delta	Oregon Meter Repair &	Adam Womack	Nelson, Ron	Angela Parrish-Green	Courtney Krause
City of McMinnville	Water Solutions	Hensley, Daryl	Jason Branske	Kenny Parent	Taylor Tibbets
Sun Country Water		Conley, Neal	Darren Caniparoli	Howard Hamilton	William Bateman
		Erb, Chad	Sean Ralston	Chris Doss	
		Baldwin, Stephen	Jeff Brown	Steven MacCarthy	

INDIVIDUAL MEMBERS

Adkins, Jacob	Close, Greg	Hamilton, Howard	Jacob, David	McCanty, Mike	Pino, Patricio	Statchwick, Jeff
Anderson, Dale	Coffman, Victoria	Hamilton, Megan	Johnson, Grady	McGinnis, Lee	Powers, Ryan	Steidler, Matthew B.
Anderson, Kenneth	Conant, Charles	Hamilton, Mitchell	Jones, Robert	McLauchlin, Gary	Pryor, Ben	Stirling, Ethan
Anthony, Joe	Connelly, Barbara	Hand, Eric	Judah, Dave	McMullen, Ryan	Ramsey, Tyler	Taylor, Ian
Bagdonas, Eric	Conyac, Jeremy	Hanks, Kevin	Katrena, Scott	Merrell, Thomas	Ranch, Destin	Terrusa, David
Barnes, Chase	Crosby, Ty	Haring, Joshua	Kemmer, Alex	Miranda, Michelle	Rand, Terry	Thompson, Branden
Bidwell, John	Deagn, Tony	Hawkins, Michael	Kemper, John	Mitchell, Michai	Renhard, Chad	Thayer, Bradley
Blench, Steven	DeHaan, Josh	Hensley, Daryl	Kirchmann, Russell	Moffit, Jeremiah	Robinson, Rob	Tupper, Sean
Boyles, Blake	Demanett, Micah	Hermansen, Dave	Klinger, Martin	Moretti, Garrett	Robustelli, Jason	Uhrich, William J.
Brown, Jeff	Doss, Chris	Hills, Tyler	Kuiken, Dakota	Monroe, Donald	Saubert, Terry W.	Valencia, Albert
Brown, Rick	Durfee, Kenneth	Hisaw, Russ	Kunders, Aaron	Morris, Brady	Schaafsma, Eric	VanWagoner,
Buskirk, Jeff	Elder, Dave	Hoefler, Matthew	Laetzsch, Dawna	Morrow, Jason	Schluckebier, Dave	McClellan
Cable, Joe	Evans, Peter	Hoesch, Jacob	Lambert, Ross	Neal, David	Schroder, Michael C.	Vega, Braden
Caldwell, Kevin	Fluetsch, John	Horton, Ray	Lee, Jon	Nelson, Ron	Scott, Keri	VonPinnon, Michael
Calhoun, Christopher W.	Free, Derek	Houchin, Jeff	Leffler, Chuck	Novac, Samuel	Sears, Ronelle	Vorpahl, Mike
Cameron, Zachary	Freel, Milton E.	Howard, Richard	Lockard, Darrel	Odell, Mark	Seelye, Shawn	Wabschall, Aaron
Carlson, Rob	Gallino, Joseph	Howell, Roy A.	MacCarthy, Steven	Ortiz, Sam	Sewall, Andrew	Wabschall, Steve
Carter, Roy	Gaskey, Harvey	Hubbard, Tom	Malone, Pamela	Ott, Mallory	Sibert, Donald	Welch, Logan
Ceballos, Oscar	Gentry, Mike	Huff, Zach	Marshall, Chad	Paola, Robert	Skaggs, Jesse	Wesely, John
Chipman, Kenneth	Gil, Riley	Hughes, James	Marshall, John	Parent, Kenny	Smith, Conrail	Williams, Scott
Christensen, Matthew	Gilkison, Levi	Hume, John	McCasin, Dale	Parrish-Green, Angela	Smith, Joseph Sr.	Winterton, Robbie
Clark, Jamie	Glanz, Jared	Hunter, Greg	McCready, Wade	Partney, Sheldon	Smith, Larry	Woodward, Steve
Clark, Joshua	Gott, Craig	Jackman, Danaea	McElroy, Kerry	Pierce, Scott	Springer, Rondi	York, Christian
Clement, Tony	Halverson, Bruce	Jackson, Pat	McFall, William B.	Pike, Steven	Stark, Chris	Zuniga, Antonio

ASSOCIATE MEMBERS

4B Engineering & Consulting	Correct Equipment, Inc.	Instrument Technology Corporation	Reiner Pump
A.Y. McDonald MFG. Co.	Ditch Witch West	Kasco Marine	Romac Industries, Inc.
Adkins Engineering & Surveying	Diversified Construction and	Kennedy/M&H Valve	Romtec Utilities, Inc.
Advanced Control Systems	Consulting, LLC	Lakeside Industries/EZ Street	Schneider Water Services
Aegion-Insituform Technologies, LLC	DN Tanks	League of Oregon Cities	Schroeder Law Offices, PC
AKTIVOV Asset Management	Edge Analytical Laboratories	Master Meter, Inc.	Sensus USA
American AVK Company	EJ	Metolius Engineering LLC	SHN Consulting Engineers &
American Flow Control	Energy Trust of Oregon	Morrison-Maierle	Geologists
Anderson Perry & Associates	Enviro-Clean Equipment, Inc.	Mueller Company	Smart Earth Technologies
Aqualitec Corp.	Ferguson Enterprises	MuniBilling	Smith & Loveless Inc.
Backflow Management, Inc. (BMI)	FloHawks	Neptune Technology Group	Special Districts Assn of Oregon
Badger Meter, Inc	Frank J. Martin Company	Numberg Scientific	SUEZ Water Advanced Solutions
Bainbridge Associates, Inc	Frontier Precision, Inc.	NW Hydrovac	The Automation Group
Bancorp Insurance	Frost Engineering Service Company	Olson Engineering	The Ford Meter Box Co., Inc.
Beebe Water Systems	NW	One.7, Inc.	TMG Services
Big Dog Sales, NW	Furrow Pump, Inc.	Optimal Control Systems	Trade Tool
BioLynceus, LLC	G.T. Gordon & Associates, Inc.	Oregon Meter Repair & Water	Tripac
Business Oregon Development Dept.	General Pacific, Inc.	Solutions	U.S. Cellular
Cascade Columbia Distribution Co.	Goble Sampson Associates	Oregon Public Utility Commission	UGSI Solutions
Cascade Waterworks	Harmsco Filtration Products	Orengo Systems	Umpqua Research Co.
CIMCO-GC Systems, Inc.	Harrang Long Gary Rudnick PC	Owen Equipment Company	Underground Tech.
CIMCO Sales and Marketing	HASA Inc.	Owens Pump & Equipment	USABluebook
Civil West Engineering Services	HD Fowler Company, Inc.	PACE Engineers, Inc.	Vortex Pipe
Clow Valve Company	Hose Solutions	Pacific NW Sales	Waterlab Corp
CoBank	Hurley Engineering Company	Pittsburg Tank & Tower Co.	Western Water Works Supply, Co.
Columbia Laboratories	Hydra-Stop	PumpTech Inc	Whitney Equipment Company, Inc
Consolidated Supply Co.	HYMAX by Mueller	Puttman Infrastructure, Inc.	Wm H. Reilly & Co.
CORE & MAIN	InfoSense, Inc.	RDO Equipment	Xylem, Flygt Products



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