

The Wyoming **Connection**

Fall 2023

Rural Water Stands up for Public Water Systems

Groundwater – The Disappearing Act

Make Emergency Response Planning a Thing





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The Wyoming Connection is the official publication of The Wyoming Association of Rural Water Systems. It is published quarterly for distribution to member systems, water and wastewater Operations Specialists, water related agencies and companies, legislators and government officials.

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Articles, letters, and photos are welcome.

Submit to:

Wyoming Association of Rural Water Systems,
PO Box 1750, Glenrock WY 82637

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(307) 436-8636 TDD 1-800-877-9965

e-mail: warws@warws.com

Web Site: <http://www.warws.com>

WARWS Staff

Office:

Mark Pepper, Executive Director

(307) 259-6903 markp@warws.com

Cori Wondercheck, Office Manager

coriw@warws.com

Donna Uribe, Administrative Coordinator

(307) 258-3414 warws@warws.com

Field:

Mitch Godwin, USDA Circuit Rider

(307) 763-8467 mitch.godwin@warws.com

Rick Nansen, USDA Circuit Rider

(307) 251-2803 rick.nansen@warws.com

Kathy Weinsaft, USEPA Training Specialist, UMC

(307) 262-3943 kweinsaft@warws.com

Joe Dankelman, Wastewater Specialist, UMC

(307) 439-9065 joed@warws.com

Michelle Christopher, Source Water Specialist UMC UFC

259-8239 mchristopher@warws.com

Ross Jorgensen, Technical Assistance Provider

(307) 202-3494 jorgs1973@hotmail.com

Sunny Schell, Technical Assistance Provider

(307) 670-5709 sunnyschell@gmail.com

UMC - Utility Management Certification

UFC - Utility Finance Certification

Apprenticeship Coordinator - Riata Little-Walker

(307) 620-0579 riatalw@warws.com

WARWS Board of Directors

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Contents and Features

Rural Water Stands up for Public Water Systems, Mark Pepper	6
Groundwater – The Disappearing Act, Michelle Christopher	8
USDA Water & Wastewater Disposal Loan and Grant Program	9
Make Emergency Response Planning a Thing, Kathy Weinsaft	10
Associate Members	11
Hello Winter 2023, Joe Dankelman	12
The View from Here, Rick Nansen	13
Rate Setting Best Practices, Carl Brown	14
Our Western Heritage – Mad Dog and Pilgrim, Kathy Weinsaft	16
Operator's Corner, Michelle Christopher	17
Scrawny Girl's Crawdad Boil, Michelle Christopher	18

The Association

Wyoming Association of Rural Water Systems is a non-profit association that provides on-site, one-on-one technical assistance and training to small municipalities under 10,000 population and all water and wastewater systems throughout the state. Equal Opportunity Provider.

Cover Photo – Seven Brothers Lakes, located in the Big Horn Mountains.

We tried to find out how it got its name with no success. The best we could learn was that they are so close together, they are like brothers.



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WARWS' Mission:

To provide the assistance necessary to meet the needs of our membership and to ensure the protection of Wyoming's water ~ our most precious resource.



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Rural Water Stands up for Public Water Systems

Many regulatory issues are coming to a head that will or could affect your system. National Rural Water Association (NRWA) and Wyoming Rural Water are working hard to make sure the contemplated regulatory changes are implemented or issued to best benefit the membership and all public water systems.

Lead Line Inventories – Everyone reading this should know by now that Lead Line Inventories must be completed and delivered to the EPA by October 15, 2024, a scant 13 months from now as I write this. Has your system started the time consuming process of looking at your systems building records to determine what, if any, customer services might be within the investigation time frame to determine if lead or galvanized water lines were used in construction? What about DIY additions to properties?

If you have been procrastinating about doing the inventory/mapping of your system thinking that the time frame will be extended or cancelled, think again. “Getting the lead out” is a very bipartisan goal. I do not expect that the deadline for the inventories will change, the clock is ticking.

To Assist you, Wyoming Rural Water and the National Rural Water Association have partnered with 120Water who can assist you. In addition, WyDEQ is contracting with engineering firms to also assist with the lead line inventory project.

The NRWA Region 8 Environmental Finance Center (EFC) has secured statewide mapping conducted by Sacramento State University that might help jump start your investigation as to which “taps” may need investigation for lead/galvanized piping and fixtures.

A second area that Rural Water has jumped into the fray is on PFAS.

PFAS update – To better serve State Associations and their member utilities negatively impacted or potentially negatively impacted by PFAS contamination and other water pollutants, and related current and future State and Federal regulations, NRWA agreed to undertake a campaign, the PFAS Cost Recovery Program, to work with State Associations to actively educate their water and wastewater utilities about these PFAS contamination issues as well as to encourage them to join the NRWA PFAS Cost Recovery Program by retaining [Napoli Shkolnik PLLC](#) for participation in the

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current Multi District Litigation (MDL) proceeding in the Federal District Court for South Carolina (MDL 2873) as well as any other appropriate action in State and Federal Court.

What is PFAS?

Source: [Michigan Department of Environmental Quality](#)
 Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. PFOA and PFOS have been the most extensively produced and studied of these chemicals. Both chemicals are very persistent in the environment and in the human body – meaning they don’t break down and they can accumulate over time. There is evidence that exposure to PFAS can lead to adverse human health effects.

What are the health effects of PFAS?

Studies have shown an association between increased PFOA and PFOS blood levels and an increased risk for several health effects, including effects on the liver and the immune

system, high cholesterol, high blood pressure, thyroid disorders, pregnancy-induced hypertension and preeclampsia, and cancer (testicular and kidney).

Where can PFAS be found?



Source: Healthy Indoors

PFAS may be in drinking water, food, indoor dust, some consumer products, and workplaces. Blood serum concentrations of PFASs are higher in workers and individuals living near facilities that use or produce PFASs than for the general population. Pathways of exposure include ingestion of food and water, use of consumer products or inhalation of PFAS-containing particulate matter (e.g., soils and dust) or vapor phase precursors.

What can we do about it?

The National Rural Water Association (NRWA) has joined with the law office of Napoli Shkolnik PLLC to bring together utility systems from across the country that have concerns or have been affected by PFAS contamination. This potential landmark contamination case could help water and wastewater systems recoup money spent on treatment and remediation.

Napoli Shkolnik will represent clients in any state who are dealing with contamination of public water supplies.

Cyber Security - is also in the news and a new proposed rule would shift cyber security to the Sanitary Survey and create significant deficiencies. While we all take cyber security seriously, a rule may not be the best method for compliance. Rural Water took the initiative to challenge the EPA on creating a rule.

Court pauses Cybersecurity Rule for AWWA, NRWA water utility members following legal challenge

July 12, 2023, the U.S. Court of Appeals for the Eighth Circuit granted a request from the American Water Works

Association (AWWA) and the National Rural Water Association (NRWA) to stop the U.S. Environmental Protection Agency’s Cybersecurity Rule from going into effect until the current case challenging the rule has been decided.

The Court’s decision applies to all AWWA and NRWA members nationwide. AWWA and NRWA requested that the court stay (pause) the rule during a legal challenge from three states so that their members would not have to undertake costly changes to their operations until the court decides if the rule is legally valid. The stay applies until further notice from the court.

“NRWA commends the court for issuing this stay preventing EPA from enforcing the Cybersecurity Rule until it is determined if it has been lawfully implemented,” said NRWA CEO Matthew Holmes. “While NRWA fully supports efforts to strengthen cybersecurity in small communities across the country, enforcing this regulation is not the best way to help small and rural systems, and could have costly and unnecessary consequences.”

AWWA and NRWA joined the States of Missouri, Arkansas, and Iowa in a legal challenge to the Cybersecurity Rule because of concerns about the legal process and legality of the rule, concerns that the rule may create additional cybersecurity vulnerabilities for members, as well as concerns that states do not have appropriate resources, laws, rules or procedures in place to adhere to the rule requirements. Specifically, in the absence of a viable privacy agency implementation framework, water systems were at risk of violations for which they are unable to prepare. There is also the risk that the cybersecurity vulnerabilities of these systems would be publicly available because they are being done through sanitary surveys, which could be accessed by malicious actors.

The public wasn’t given the opportunity to comment about EPA’s proposed approach before the rule was issued. By granting a stay, the court has prevented these risks to members while it reviews the legality of EPA’s rulemaking process.

2024 Farm Bill – Several members of the Rural Water Team, Matt Holmes, CEO of the NRWA; Eric Volk, ED for North Dakota Rural Water; Rob White, ED of Alabama Rural Water Association and Dale Pierson, ED for Rural Water Association of Utah have all testified on Rural Water priorities in the next “Farm Bill” currently working its way through Congress. At last word, all of Rural Water’s priorities are currently included in the Farm Bill including a provision championed by our own Sen. Lummis on exempting PFAS contamination from CERCLA (The Comprehensive Environmental Response, Com-

pensation, and Liability Act (CERCLA), commonly known as Superfund) treatment and disposal costs. We will keep you informed on the Farm Bill as it makes its way through the congressional process.

Feel free to email me or call me with any questions on these initiatives, cases or rules. Mr. P

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- Email Hank Naughton, Managing Partner, at hnaughton@napolilaw.com
- Register at www.napolilaw.com/nrwa-pfas

Groundwater – The Disappearing Act

Groundwater has been the water bank account for the nation. It has allowed communities to develop where rivers and lakes don't exist. It has created a consistent supply chain of food when other irrigation sources dry up. Unfortunately, the bank account is looking like the national budget – in a deficit.

Groundwater use is in a perfect storm as surface water sources become less reliable due to drought and wildfires, and groundwater exploration rises. Communities are switching to groundwater to augment or replace less reliable surface water sources. Farmers are looking to groundwater sources as well to augment surface water irrigation shortfalls. During drought, which I believe is up to 80% of my trips around the sun, surface water sources run short, which reduces the amount of recharge to groundwater. In addition to lower recharge rates, wells are being drilled at increasingly deeper depths. These deeper aquifers have exceedingly low recharge rates, meaning that the water pumped out today may not get recharged within my lifetime.

The most commonly discussed aquifer when it comes to aquifer depletion is the Ogallala or High Plains Aquifer. This aquifer not only provides water to several communities in southeastern Wyoming, but it also provides irrigation for at least one-fifth of the total annual US agricultural harvest covering 8 states, as well as supplying communities in those states with water.

As well completion ramped up between the 40s and 70s, the water levels in the aquifer began to decline. In some places, the water levels dropped 10 feet, in others, 100 feet. But the Ogallala isn't alone. Aquifers in Arizona, California and eastern states like Illinois, Arkansas and Louisiana have also experienced depletion according to the USGS. Coastal wells may not decrease in level, but decreased water in fresh aquifers can allow for intrusion of salt water, thus making the wells undrinkable.

Declining aquifers not only affect our water supply, but the landscape as well. When water levels decline in aquifers, these voids are left between the particles. Generally, one of two things happens to the voids: the voids compress from the weight of the overlying strata (subsidence), or the voids congregate creating a sinkhole. Subsidence can show up as massive cracks in the ground, or the ground simply lowering.

These geological features are inconvenient in the wildlands, but in populated areas or areas with critical infrastructure, it can get downright dangerous. Buried pipelines, tanks and

foundations could be damaged through both subsidence and sinkholes. Subsidence from aquifer depletion is evident in communities like Long Beach, Mexico City, Venice, and Las Vegas. Compounding the issue is if the voids in the aquifer are compressed, the aquifer loses storage capacity. This means that without intervention, the aquifer will produce less water regardless of the increase in recharge.

If the nation as a whole (yes, I am aware there are a few areas of increasing aquifer levels, but overall, the trend is downward) is withdrawing more groundwater than recharge rates can sustain, what alternatives do we have? Certainly, the obvious answer is "use less". But how do we do that equitably and justly? It's easy to say everyone needs to cut their water usage by 10%. But is it equitable to expect a user that is water conscious and using less than the average per capita per day to cut an additional 10%, the same as their neighbor who waters their lawn like they're growing rice?

Is it just to reduce agriculture's use of water to provide an uninterrupted food supply in the same way we reduce watering lawns, parks, and cemeteries? I do not disagree that pumping water out of the ground in Arizona to grow alfalfa hay to ship overseas is perhaps not the best use of our water. The ag industry needs to take a hard look at sustainability in the same way municipalities do. These are hard conversations involving differing priorities, economics, and cultural values.

In the meantime, water systems can do a self-check. How much water does your system use? How much does your system usage increase during irrigation months? Irrigation season is a great time to improve system revenue, but are you subsidizing those high users because the community values green lawns?

Do a rate check. Compare water pumped to water sold. If you're pumping more water than your system can account for, check for leaks. If you treat the water, review plant processes to ensure that they're as efficient as possible. Track your well levels, both pumping and static to develop trends. These trends will allow you to notice changes before they become a problem. (Are you picking up a trend? I'm pretty sure trends have made every article I've written this year!) Finally, make sure you are measuring and reporting your water usage to the state. Wyoming water rights allow you to put water to beneficial use. If you can't prove that your system is putting the water to beneficial use, it will be difficult to prove that your system needs more water.

Declining groundwater in Wyoming and the nation is a serious issue that we need to be addressing. While immediately stopping use of groundwater is impossible, doing nothing is irresponsible. Begin having conversations with your coworkers, decision makers, family, friends, enemies, and community. From where I'm sitting, I don't see anyone of us getting out unscathed. If you want help starting the conversation, or simply starting a system self-check, let me know. I'd be honored to be a part of it.

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04

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05

Other related activities such as permits and legal fees



Scan the QR code to view more information and start your application.

Make Emergency Response Planning a Thing

A couple of years ago, systems over 3,300 in population were scrambling to get their AWIA compliant plans completed and certified. Those systems below that population did not have to certify plans, but they did need to update them.

Circumstances and responsible parties are always changing, and ERP's should be changing with them. We should not be doing these plans because they are required. We should be doing them because we need them.

A good emergency response plan should describe what strategies, resources, and procedures your system can use to prepare for and respond to an incident, natural or man-made, that threatens life, property, or the environment. These incidents don't have to be huge. They can be things like main breaks, a positive sample or loss of pressure. I understand that you know so much about your system that you can handle stuff like this blind-folded and with one arm tied behind your back. But what if you aren't there? Are you as confident about others that may be taking care of your system? Think of it as instructions for someone that may be filling in for you.

The first step in developing or updating your ERP is a comprehensive risk assessment to identify potential hazards and vulnerabilities in your system. These hazards in Wyoming always need to include weather events. Did last winter uncover any weaknesses you may not have considered? Were you able to get to all the parts for your system?

It is unseemly for a Wyomingite to complain about moisture, but this has been the wettest year I can remember. Not only has it been wet, but it has come in deluges. Is your system vulnerable to flash floods or flooding in general? Wind. Do I really need to say more about that Wyoming hazard? How about power to operate your system?

Lack of power redundancy is one of those hazards that really worries me considering the fragility of our electric grid. Don't forget teenagers. I have always said that I thought the most dangerous threat to many of our systems are bored 16 year olds. Can they get up on your tank? What else might they do? There will be other risks that we just can't even imagine. Prior to 2020, pandemics were not often included in ERP's. They are now. Cyber Security also needs to be assessed and included. Things in our industry really do change very quickly. It is important that your assessment continues to evolve.

Don't try to do this alone. Put together an emergency response team. There are lots of reasons for doing this. You will get ideas that probably never occurred to you. Many hands make light work and people that are involved will have buy-in. It's hard to complain and whine about something you were involved in developing. Reach out to decision makers and get one of them to commit to being on the planning team. Don't forget to ask your clerk. She may know more about what is happening in town than anyone else. If you have an emergency response team in town, be sure that they are included. We need to coordinate with them and they need to coordinate with the water system. It is darn hard to address any emergency without water. Be sure to contact your LEPC (Local Emergency Planning Coordinator). This is a county position and it is the only person you are required to contact by law when the water system is developing a plan.

I am convinced that one of the weakest points in all of Wyoming's emergency response plans is communication. Consider using multiple communication channels such as text, emails, social media, radio, door knockers if necessary and don't forget emergency amateur radio operators. Reach out to them now before there is an emergency. They would be a good resource to have on your planning team.

Collaboration is the difference between a plan actually working or just looking good on paper. Start talking to not only your local emergency management planning agencies, but be sure to reach out to your health department and labs. If, God forbid, there is a water borne disease outbreak, you want to have someone at the health department that knows you.

It is also important to have relationships with labs that you may not even use. What if you need a sample on the weekend? Do you know who you can call? Do you have emergency numbers for the labs?

I also suggest you talk to your regulators. Let your DEQ district engineer know that you are working on your emergency response plan. Give Nara Jirik, (303) 312-6789 the Region 8 EPA Water Emergency Response Team Coordinator a call and get any advice or suggestions she might have for you.

Now here is the kicker. If you are a system under 3,300 and you want to develop a plan that meets the AWIA requirements, you can get 5 CEU's for the Risk and Resiliency Assessment and 10 CEU's for the Emergency Response Plan. Your time needs to be documented and you need to be working with a technical assistance provider that can certify that the plan has been done to meet requirements and that you have actually spent the time.

WARWS staff can do that for you. If you are interested in doing something you really NEED to do and get CEU's along the way, give me a call. We can do this and make emergency response planning a thing!

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Wade Hirschi, CPA, PC
Wade Hirschi (307) 885-1040

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Hello Winter, 2023

Once again winter is fast approaching the great state of Wyoming. Many are still recovering from the amazing winter of last. Some are ready for what mother nature has in store for this year. Some are wishing for a mild winter! I sure hope we get blasted once again! Besides the many hats many operators may wear, take a little time in your hectic schedule to winterize your sewer system for the upcoming deep freeze.

If possible, make sure all your critical gate valves down at the lagoons are located, mapped, and exercised before the white stuff comes rolling through. It's never any fun to break out the weed burner and metal detector looking for them illusive gate valves, only to find that the valve box is completely full of rocks and soil.

Are all the valve vaults/boxes cleared out of the summer weeds and trash. Are the valves exercised heading into winter? If using bugs, is there enough to see ya through winter? Please make your job a little easier while it's still warm out. Make sure your system is up to date with the DMR requirements, as well as all the testing requirements for the year. How are the lagoons looking going into the Winter? Can the levels be adjusted to kill off any unwanted critters/ weeds? How is the color of your cells looking compared to last year? Is there records going back a few years with temperatures, PH readings, and O2 data? How are those year end records coming along?

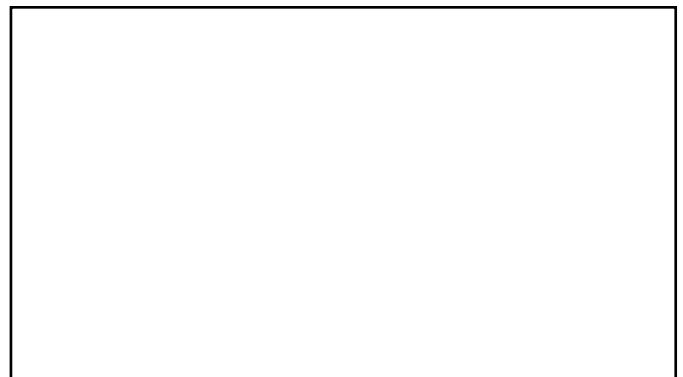
Does your wastewater system have an updated O&M manual? Make a list of the missing materials you would like added to your records. In between plowing all that wonderful snow, get the paperwork caught up. Lastly, as silly as this sounds, has everyone looked at their training records? Some how there seems to be one in every crowd who forgets to check! Yep, I still get phones call near the end of December, looking for a rules class, or several hours still needed for this year.

Seeing many new faces this year, some are getting thrown into the deep end as they try to figure out the basic operation of their lagoons. One big item I see missing is the O&M manuals. For the water side, a Sanitary Survey usually keeps systems up to par. Then on the wastewater side, things kind of get put on the back burner and forgotten. The few new operators I've helped out, are all over getting a O&M manual up and running. As our industry has still been struggling to recover from the last few years, take a quick tour of the inventory you have on hand. In the dead of winter, start getting that wish list compiled for next year's budget. Oh, how time

flies by! Some parts are still months out before they get back into inventory. Don't fall short on the basic needs that your system needs to operate.

For the new operators, in these next few months, take a few minutes and get familiar with your system. Never be afraid to ask questions of the support group around you. Get familiar with the towns in your immediate area. For the most part, operators are willing to share their knowledge! Wearing all the hats of a small town is a daunting task, to say the least! Being the new guy is mostly overwhelming in small towns. However, never forget the public depends on operators to keep them safe. In the end, being a water / wastewater operator is not a glamourous job, not a high paying job, basically a thankless job, but it is the most important job in the community.

I was blessed with a trip to Denver this month for our National Conference. Besides all those crazy drivers down that way, it was an awesome trip. As I listened to many speakers throughout the days, I realized just how important all the operators are to our communities. Time and again the guest speakers had nothing but praise for all the hard-working people in our industry! I just wanted to pass along those words to all the great operators in Wyoming. Be Safe!



A Note From Rick Nansen

Circuit Rider
rick.nansen@warws.com
307-251-2803

The View from Here

I've been writing articles for a month or so now, and I'm not finding it an easy task. Nothing has felt right. Informational stuff and the internet are available everywhere, and it only takes a few minutes to look anything up. And my opinion, well, like they say...everybody has one. I started to follow various trains of thought and wanted to put something out that meant something, but what? Everything I started, and even almost completed, fell flat to me. Mostly, I lacked bits of information to complete, or waiting on somebody to get back to me...which they never did. So here I am... trying to write something of value to the masses and my constituency in the water/wastewater biz.

I could talk about hunting, but most of you will be afield soon, if you aren't or haven't already. I could talk about the upcoming/ongoing service line replacement program we'll all be doing/completing soon. New PFAS rulings and updates. Funding. EPA. DEQ. Mayors. Councils. Customers.... then it came to me, why I'm here...Operators. My *raison d'être*.

There's one variable that is never a constant... the operator... ever changing, ever vigilant, the one thing that is always a pleasure and draws my constant attention. Never dull, always full of wit and wisdom, they make my day when I have these times of unfulfillment and lack of direction. I could go on and on and give all the textbook definitions of heroes and factfinders, on a constant mission to do anything with absolutely nothing...and laugh about it. Get an e-coli hit and spend a month or two writing report after report, taking lab tests and appeasing the agencies and administrators. Answering question after question from consumers, bosses, primary staff... looking for help or assistance and finding little. But always with a smile on their face and not only ready to tackle it but go above and beyond what is required. Knowing their system, it's like keeping a sick friend going and keeping them comfortable the whole time. A labor of love you might say. Even frustrated, I see their professionalism shine through always. The weather reminds me of the times I've seen them in some very uncomfortable circumstances, up to their necks in...well let's just say water for now, on a cold dark night below freezing and snowing to boot. Hands cold and numb, but a task at hand needs to be done now. It can't wait for a better time for them to do it, because they know and understand their customers' needs are now, not when there's light, it's warmer and not snowing.

There are times when they must change hats and become a customer service representative. Sometimes easy peasy, and sometimes they take the brunt of someone's bad day. But

always with a smile. Not always easy but they have become quite adept at handling these situations. And it's the same with management, underlings, regulators and all whom they meet and deal with. I've seen a few tempers elevate, but it really is rare. That's saying something when you know what they deal with constantly and consistently. I've watched many situations that you just know is going to blow.. but their contact walks away peacefully, quite often smiling or laughing by the conclusion of the conversation.

These same characters are in constant training. Sometimes at a formal training session, sometimes on the job...but learning is what they do best. It may be math, formulas, calculations. Maybe helping to understand loans and grants. Not necessarily in their position description, but picked up just the same. They learn about pumps and motors, cyber security, capacity development, IUP's, GIS, MOU's, CT values, PFAS, treatment techniques, lab work...and on and on. They know and understand the electrical and plumbing needs of their system. They understand the physical characteristics and layout of their systems. Quite often, they take what was designed with good intentions, yet built somewhat lacking... and make it work despite itself. Within budget, on time and safely. Quite often they're told it won't work, but they make it do so. They stay within the confines that are laid out for them, rarely making mistakes. They operate their systems so well and could even do it in their sleep. I think what I've found most disheartening about these characters...that as a Circuit Rider, they don't need me much.

I'm always amazed as I travel the state, the networks they've set up among themselves. Like kind relying on like kind. They are the kings and queens of networking. I rely on them often for historical operational data and other bits and pieces of information they have retained. And its good info I get when I ask. When I talk to office staff, I often find they frequently rely on the operators for much that only a field tech or someone knowledgeable in the field could even understand. (Office staff...there's another great topic for the future) And while I don't always show up at the best of times, I'm always welcomed with open arms. They make their jobs theirs. They live for them; they thrive on them. I'm not so sure they think of it as a job, as much as it is their life. Their systems are theirs. They live, eat, sleep their positions. Most could put somebody on a phone, and they could walk them through a "fix". They teach their underlings the ropes. They pass on info to those who are willing to learn and listen. Operators don't just go to work; they live within their systems constantly and faithfully. They know it inside out. They know what's next. The pump, well, or whatever will need attention next. Sure, they keep records and logs, but they also "Feel" their systems, their 'babies', and know what's most apt to come next. They are unsung heroes that keep it flowing in the right direction. They quite often work for less than they could make elsewhere (in fact much of the time) yet stay where they're at because they care. They are operators. Duly certified and selected for their skills that are often forgotten...but they never forget and are always on the job... even when you don't see them.

Pulling up to a system and saying "howdy" to an operator is the best job I've ever had.

Information, Motivation and Locomotion; Making Projects Happen

Rate Setting Best Practices

Carl Brown, President
GettingGreatRates.com

Author's note: This article is a summary of part of the "Rate Setting Best Practices Guide," also written by me. That guide covers a full range of best practices for utility rate setting, with much detail and explanations. The guide is available for free download at <https://gettinggreatrates.com/Freebies>.

Let's face facts. There are lots of bad utility rates out there, probably yours included (no disrespect intended – it just happens). Rates are commonly too low and almost always unfairly structured. Both can be fixed if you go about it the right way. This article will help you get started.

The mission of a public utility is to:

1. Provide a valuable service to the public,
2. Do it effectively, and
3. Do it fairly.

The public assumes you will accomplish Missions 1 and 2, and you should. Mission 3 is not impossible, but it is tricky. The following should help you succeed.

1. Abide by all state laws, bond agreements, agency regulations and anything else that governs how you set rates.
This is kind of the "other duties as assigned" clause for utilities.
2. Be open and honest with ratepayers, when

Generally, "**bad customer**" means a non-paying customer. You will have some of those. It is just the nature of some folks. But don't unnecessarily create more bad customers.

necessary, painfully so. Do this all the time. It will keep you on the straight and narrow. Your ratepayers will grow to appreciate it and trust you for it. Their trust and support are critical to the success of the utility.

3. Related to Best Practice Number 3, always keep the difficult-to-pay customers in mind when setting rates.
I always consider the bill effect on the "little old lady, widowed, retired, living alone on Social Security." I advise client utilities to try to keep her bill from becoming unaffordable, turning her into a bad customer. That goes against the "everyone should pay their own way" notion, but proper rate setting is not purely about cost recovery.
4. Stop comparing your utility's rates to the rates of other utilities.
If rates of utilities "down the road" are not

"**Rate analysis**" considers all key rates-related issues over a five to ten-year projection period to arrive at a set of rates and fees that fully fund the utility and do it fairly.

The American Water Works Association describes "**rate studies**" as doing nearly as much as rate analysis. However, in common practice, things called a "rate study" often consider only one year and far fewer rates-related issues. Most do not classify costs to the customer level, which must be done if rates are to be fair at the customer level.

sustainable, they will probably be unsustainable for your utility, too. One exception: comparing new connection fees is a reasonable exercise. Charge too much and development goes "down the road."

5. "Right-size" your rates.
Right-sized rates are not too complex, not too simple, as close to a cost-to-serve structure as is practical and set up to serve the situations of the utility and its ratepayers.
6. When it is time to get right-sized rates, get a good rate analysis done.
A good rate analysis is useful for many things. Many, many things.
7. When your analyst says, "Adopt these rates," do it. Worst-case scenario: If the rates go wrong, you can blame the analyst and make them do it over.
8. If you are a rates adopter and you do your own "rate studies," stop that!
Rate analysis is technical. Unless you are an experienced rate analyst, when you calculate rates, you are probably making errors. When you need surgery, hire a surgeon. When your car needs a new transmission, hire a mechanic who specializes in transmissions. When you need rate analysis, hire a good rate analyst.

Do-it-yourself rate studies? Don't do it!

9. While you should not do your own rate studies, you should do your own annual incremental across-the-board increases during the years between rate analyses.
Raise rates every year, at least a little bit. Inflation happens. Keep up with it. This is how you should proceed.

Raise rates every year, at least a little bit.

Step 1: Get a rate analysis done by a rate analyst, so you will know how high and how to structure rates and fees initially.

Step 2: The next year at budget preparation time, calculate how much higher the budget needs to be compared to the current year's expenditures. When you adopt the new budget, adopt across-the-board rate increases that will fund that budget properly. Repeat Step 2 each year until the rate structure becomes unfair enough to make a new rate analysis worthwhile, usually in about five years.

Think of the two steps like this:

Step 1 is when a professional mechanic replaces the engine in your car.

Step 2 is when you make sure you change the oil regularly, from now on.

Going about rate calculations and rate adjustments in this way, the restructuring adjustments are calculated by the analyst, infrequently. The across-the-board increases are done by you each year as you prepare each budget.

1. You try to run a zero balance in the utility because it is a “non-profit.” Stop that. Non-profit does not mean have no reserves. That is irresponsible.
2. On a related note, stop subsidizing one utility with revenues from any other utility. Every utility should pay its own way.
3. Stop including a usage allowance, “free water,” in your rates. Water is not free, and it is not fair to “give” 2,000 gallons per month to all if not all use 2,000 gallons every month. Any usage allowance skews rate structure fairness.

You can give water away, but that does not make it free.

4. Stop allowing new connections at low connection fee rates. Capacity to serve costs money. New connections should pay for as much of that cost as is practical.
5. Start assessing minimum charge surcharges that recover capacity costs proportionate to meter size. When there are several meter sizes on the system, or just a handful of large meters, meter size-based surcharges should be added to the base minimum charge to recover capacity costs.
6. Start raising rates every year, at least a little bit. Does this sound familiar? Then, do it.
7. Start planning for and costing out capital improvement program (CIP) expenses. Analysis is responsible only if it fully considers CIP needs. In fact, current or approaching CIP needs are usually the prime reason utilities request rate analysis – they need more money!
8. Start scheduling and costing out equipment repair and replacement (R&R) needs, for the same reason as CIP.

Excel spreadsheets to help you do CIP and R&R planning, scheduling and costing are available for free download at <https://gettinggreatrates.com/freebies>.

The full list in the guide goes up to Best Practice 42, so there is a lot yet to learn. To get started setting proper rates, you should call Kathy Weinsaft at the Association and ask for rate setting help. If Kathy or other staff can help you, great. If not, she will probably refer you to me, through the Wyoming RATES Program. Visit <https://gettinggreatrates.com/> and click the “RATES” Programs dropdown.

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Our Western Heritage

by Kathy Weinsaft

Mad Dog and Pilgrim

Still suffering the trauma of surviving last winter, I am using this fall to get ready for the next one coming our way. I have no idea if it will be as brutal, but I do know I will not be stuck inside without a good book to read. I suggest we all take a road trip to the Mad Dog and Pilgrim Book Store this fall.

I was blessed beyond measure this summer to celebrate my 66th birthday at the book store, which is 40 miles from the nearest town and nestled in at Sweetwater Station. It may be in the middle of nowhere, but it looks a whole lot like paradise to me. It is so much more than a book store though. They have sheep, livestock dogs, little dogs, chickens, guard lamas and a goose and a peacock! It is a working farm. The property and the book store are owned and operated by two women that are as unique as the landscape, Lynda "Mad Dog" German and Polly the "Pilgrim" Hinds. Lynda got her nickname because she is tenacious and loyal. Polly is the pilgrim because she had ancestors on the Mayflower. Lynda is a native of Iowa and is an avid fly fisher. Polly hails from Maine and favors guns. They both ended up in the Denver area where they attended college. After college, they ran a cleaning service and had a retail book store in Denver. 23 years ago they chucked the big city life, loaded up 70,000 books and moved to Sweetwater Station to live out their dreams.

Their dream was to sell rare books online. However, they soon realized that a rotary phone and a dial-up modem was not going to be conducive to making this dream become a reality. Reluctantly, they opened the 2 story specially built building that housed all their books from Denver to the public, but for only one day a week. They painted a sign that advertises Old Books and Fresh Eggs. There was not a lot of fanfare or even an ad, but people found them. People who love books have big mouths and they spread the word. I have been to Booked Up in Archer City Texas, Powell's in Portland and the Tattered Cover in Denver and while they may be bigger, they are no where near as eclectic. In my opinion, Pilgrim and Mad is just simply one of the best used book stores to be found anywhere, and by golly, it is right here in the middle of no where Wyoming. How cool is that?

I spent three hours looking through the shelves and could have spent many more and not seen a 10th of the inventory. The first book I laid my hands on was, "From the Heart of the Crow Country," by Joe Medicine Crow. The book was written in 1992 and is a signed edition. I had known Joe for years before his death but I never knew he had written a book. I stood there and stared at it in disbelief. I have talked to others since that have had similar experiences in the book store. Michelle Christopher, who was with me, said it reminded her of the library in the Harry Potter movies that continually rotated and changed.

Truly, the selection does change considerably constantly. Hinds says she is a reader not a book collector. She selects books to sell based on her interest in reading them. She also takes wish lists from her customers. There were no stained glass books in the craft selection. I am betting that will soon change. Hinds is now on the lookout for such treasures. Start your list of books that you would like Hinds to keep an eye out for.

Along with the book written by Joe Medicine Crow, I picked up a book by Sam Morton. Sam is from Sheridan and a local legend amongst the polo community. He is also an excellent writer of historical fiction. "Where the River Runs North," won the Wyoming State Historical Society Award in the Historical Fiction category and I have wanted to read it for years. It chronicles three eras of Abraska or what is now southern Montana and Northern Wyoming. I am pretty sure horses figure prominently in the story and It will be a perfect read on a snowy Wyoming day.

Before that snow hits though, head out to Sweet Water Junction and stop at the Mad Dog and Pilgrim book store. Tell them Kathy sent you.

It is, after all, part of our Western Heritage





Operator's Corner

Water Questions by Michelle Christopher:

1. How can leaks around the valve stem of a chlorine cylinder be stopped?
 - a. Increase flow through the valve to create a frost plug.
 - b. Close the valve or tighten the packing gland nut.
 - c. Spray leak with ammonia.
 - d. Invert chlorine cylinder to allow only liquid to escape.
2. What is thermal stratification?
 - a. When a water reservoir maintains one temperature throughout.
 - b. A storage tank mixing technique using water sources with different temperatures.
 - c. A condition that occurs when all of the oxygen in a body of water is consumed.
 - d. A condition that occurs when separate layers of different temperatures are formed within a body of water.
3. A motor driven centrifugal pump is started, and the following conditions are noted: Oscillating flow rate
Oscillating discharge pressure
Oscillating motor amps
These are indications that the pump is experiencing:
 - a. Run out
 - b. Cavitation
 - c. Wear ring failure
 - d. Excessive thrust
4. Which of the following is true of the coliform group of bacteria?
 - a. All aerobic and facultative anaerobic gram

negative nonspore-forming rod shaped bacteria that ferment lactose within 48 hours at 35C.

- b. All bacteria capable of causing disease.
 - c. All facultative anaerobic gram-negative spore-forming rod shaped bacteria that ferment lactose within 48 hours at 35C.
 - d. All aerobic and anaerobic gram negative nonspore-forming spiral shaped bacteria that ferment lactose within 48 hours at 35C.
5. A sand filter is 14 feet wide and 20 feet long, and treats a flow of 0.8 MGD. Calculate the filtration rate in gallons per minute per square foot.
 - a. 224 gpm/sqft
 - b. 2857 gpm/sqft
 - c. .15 gpm/sqft
 - d. 2 gpm/sqft

1. C
 2. D
 3. B
 4. A
 5. D
1. Convert MGD to GPM = 556 gpm
 2. Find surface area of the filter - 14 ft x 20 ft = 280 sqft
 3. Calculate the filtration rate in gpm/sqft

$$= 1.984 \text{ gpm/sqft} \approx 2 \text{ gpm/sqft}$$

Answers



Scrawny Girl's Crawdad Boil

by Michelle Christopher

This has been a strange year for me. No absurdly long races, weeklong wilderness hikes, not even a weekend warrior adventure. Life has a funny way of reprioritizing schedules. Regardless, we gathered family and friends to bid farewell to summer with a crawdad boil. Crawdads, also known as crawfish or mudbugs are native to Wyoming and can be prolific in the warmer bodies of water. If you have a favorite place to catch them, I won't ask where as long as you don't expect me to divulge my favorite place to catch them. Crawdads don't get exceptionally large in a state known for its tundra-like winters, so catching enough for a boil may take the entire day, which only adds to the entertainment value of dinner. We catch our crawdads in traps made of wire mesh, using smelly bait to lure the miniature lobsters. We toss the baited traps out along the shoreline using empty water bot-

tles tied to the traps as buoy markers. After the pots have sat for an hour or so, we take the paddleboards out, pull the traps, collect the crawdads, rebait the traps and reset. Once we've caught enough to feed the crowd, we rinse the crawdads in fresh water to remove the sediment from their shells. Then, it's time to begin the boil.

Crawdad Boil – this is more of a suggested ingredient list, and it reflects our preferences. While probably not authentic (I mean, it's made by a cowgirl from Wyoming), it is delicious. If you choose to put in foul things like onions and bell peppers, that's on you.

Crawdads – the amount is based on two things: what you can catch and what your crowd will eat.

Smoked Sausage – I like kielbasa cut into 1-2 inch chunks. Andouille sausage would be good as well. You really want some sort of smoked version, and not a loose sausage, as it's not going to survive the boil pot well. I always find it surprising how much sausage a crowd of crawdad aficionados will eat.

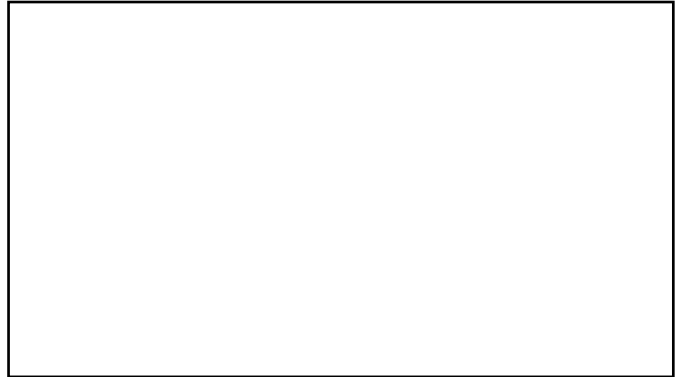
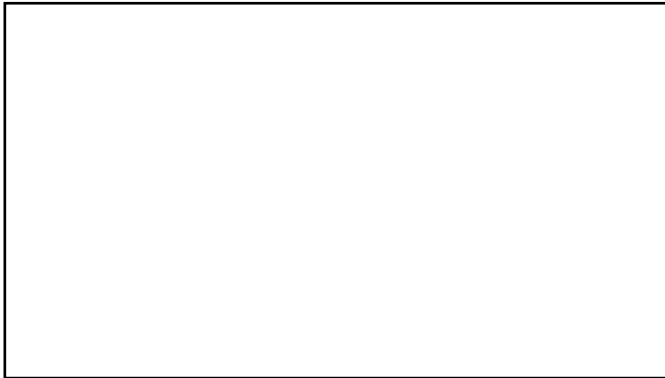
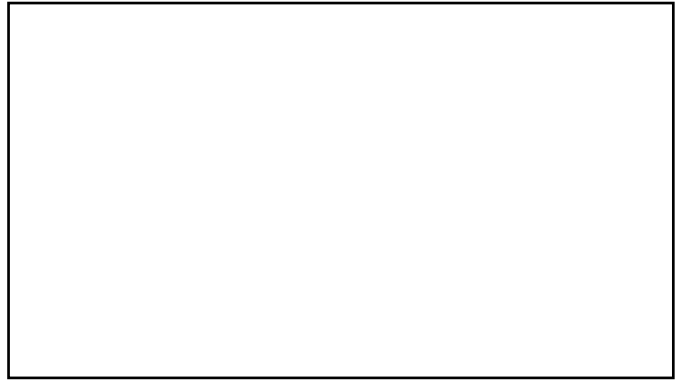
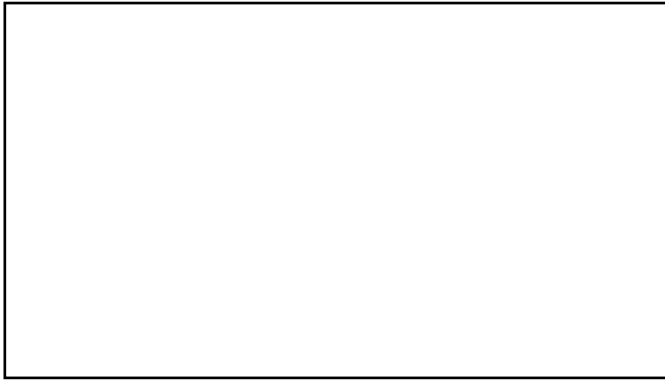
Corn on the cob – Yes, you could get fancy and bring fresh corn on the cob. Or, get the fancy frozen niblet ears. Either way, I always plan on one ear (two niblet ears) of corn per person.

Potatoes – I believe in my gran's tried and true serving of "One per person and one for the pot". Which works until you're using tiny potatoes, then figure on 3-4 per person plus a few extra.

Seasoning bag – There are several companies that make seafood seasoning boil bags. I happen to use Zatarain's Crawfish, Shrimp and Crab Boil seasoning because that's what my local grocery store sells.

Boil pot – The size of this is determined by the biggest pot you own, and how big the crowd is. We use turkey friers with stainless steel baskets in them to easily remove the food. What you don't want is water boiling over, making a mess and possibly injuring someone. Make extra batches if you need to.

While the crawdads are rinsing, it's time to start the water. Fill your pot no more than half full of water. You'll need room for the ingredients and expansion when everything starts cooking. Add the seasoning packet. My family enjoys butter, so we melt it in pots set on top of the turkey friers. When it comes to a rolling boil, it's time to add the ingredients. Add the corn and potatoes and bring it back to a rolling boil for a few minutes before you add the crawdads and sausage. Bring the pot back to a rolling boil, and make sure the crawdads are bright red (use your non-sunscreened ears as a handy reference) before removing from the water. This is where the strainer basket comes in handy. Grab your welding gloves, channel-locks and pull the basket out of the water. You can then dump the crawdads and the rest of the meal in a bowl, in a massive serving tray, or simply across a paper lined picnic table and let the crew dig in. Enjoy!



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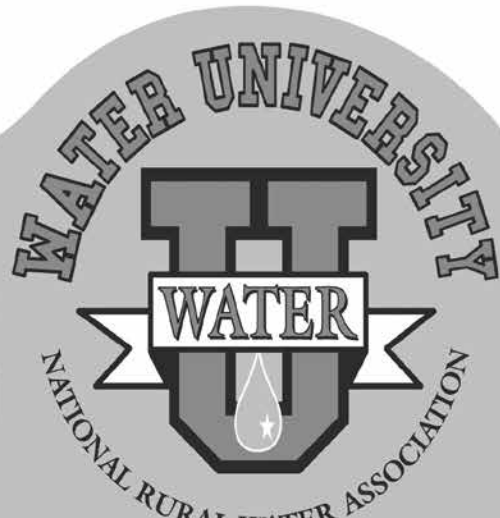


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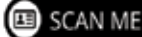
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TF 1-888-571-0170
M 1-512-567-7896
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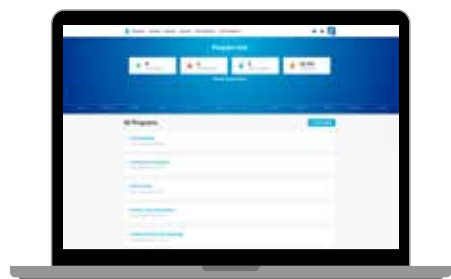
WARWS MEMBER UTILITIES:

As a member of your state rural water association, you are eligible for the following benefits and discounts:

- 15% off software
- 5% off products

IN OUR PLATFORM, YOU CAN:

- ✓ Develop your service line inventory report for submission to state and federal agencies.
- ✓ Run sampling and validation programs based on updated tier sites and service line data.
- ✓ Send timely communication to your customers at their home addresses.
- ✓ Track your service line replacement program with your recorded service line data.



ABOUT 120WATER

120Water is the comprehensive solution water professionals use nationwide to manage critical lead and drinking water programs. Comprised of secure cloud-based software services and point-of-use kits, 120Water's solution provides tailored workflows for complying with lead and water quality programs to protect public health.

FREQUENTLY ASKED QUESTIONS

WILL SOMEONE FROM 120WATER COME ON SITE TO MY UTILITY TO HELP CREATE MY SERVICE LINE INVENTORY?

120Water's software and virtual services team manage the data that helps run strategic project management that your team and contractors can use in prioritizing in-field verifications.



DO WE REALLY HAVE TO DIG UP ALL OF THE LINES?

No! 120Water houses your records-based inventory and the ability to run verification programs, leaving excavation as a last resort option.



CAN'T I JUST USE A SPREADSHEET FOR MY INVENTORY?

Yes, spreadsheets can be great tools in the right situations. However, depending on how much data you have to manage, spreadsheets can be limiting or even problematic as you move on to the next steps in LCRR, such as communications and transparency to customers.



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