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Spring 2022

D.C. Trip

Goodbye Yellow Brick Road

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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.

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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 – Aspen Alley, Sierra Madre Range. Photo by Mark Court



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Spring Random Thoughts

To describe Wyoming in the spring is to understand that all 4 seasons can occur on a single day, or sometimes before or just after lunch!! One thing is sure, we are in a drought and our fire season (that wasn't even a thing until about 10 years ago) is going to be horrendous (potentially).

As I write this, my back is recovering from shoveling 14 inches of very wet snow on top of standing during our conference for way too long (the chiropractor treatments start today – yea!!!) It was extremely needed moisture. Prior to the snow, a drought/flood/fire preparedness summit I attended had us at about 70% in most basins in Wyoming and at least 2 were close to or just below 50%. Today, with huge amounts in the mountains, almost all of our basins are just above 100%. That's great but probably will not last long.

During the summit, we learned that we might have some localized flash flooding due to soils dry enough to be crusted and not allow for soaking in so, might flood. Snowmelt will probably not create any river flooding and we are still in the midst of a long- term drought trend.

We were able to conduct our 31st annual Spring Training conference this year at our regular/usual time frame. The last 2 years we moved our conferences to late summer in hopes of hitting after the pandemic or during a lull. Not sure if it was just me or? Most of the attendees seemed beyond happy to be out and socializing. I almost felt bad to herd people back into class (but quite a few made up for it after class time).

As we head into spring/summer and the global instability continues, we should all remember to be cyber aware. Not just the stupid email asking us to purchase Apple gift cards because someone is in a meeting and can't do it themselves or click here for the invoice you requested (don't remember requesting)..... We also need to be aware that our equipment that is "automatic" probably has some computerized controls included and if connected to electricity or a SCADA system, can be hacked and could be controlled externally.

We all should have updated or be in the process of updating our Emergency Response Plans to include addressing Cyber/Physical vulnerabilities, right? Your Association staff can

WARWSDOKU

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The objective is to fill in the empty squares so each row, each column, and each 3x3 block contains the numbers 1-9 with no repeats.

assist as needed with these efforts or we can point you to some professionals who can assist.

Wyoming Office of Homeland Security is making money available to help reimburse systems for purchases made as a result of the AWIA ERP updates for both cyber and physical vulnerabilities. Give us a call for more information.

I think this is enough for some spring rambling. Mr. P

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Spring 2022 Success!!

Our 31st Annual Spring Training Conference held April 19th-22nd was successful by all measures. Thank you to all involved.

While attendance has not returned to pre pandemic levels, I'd like to think it may be affected by continuing covid issues as well as travel constraints. We had nearly 250 registered along with a sold-out exhibitor area with 61 exhibitors. The Ramkota did a remarkable job considering the supply chain issues that affect food choices as well as cleaning supplies and other aspects. The classes and the outdoor sessions, I believe, made this one of our best conferences since I have been around. Casper also performed very well I hear. I was almost sorry that I had to herd people back to class as the networking and visiting was quite evident, we were enjoying being OUT again!!!

I hope you all feel that you received full value for your registration dollar. The classes were outstanding, currently topical, and useful in this environment. Thank you to Senator Barrasso for his discussion and for all he is doing for Wyoming; Senator Lummis for her words of support and thanks to all of you for your work during the pandemic and Rep. Cheney for her comments on DC issues affecting the industry and her (and our) efforts to mitigate, correct or alter some of the regulations coming out of DC these days. Our Congressional Delegation is strong, engaged, educated on industry issues and I am very glad to work with them and their staffs.

The drought presentations from the Wyoming State Climate Office, Wyoming Conservation Districts, Cloud Seeding from Water Development, water loss audits, fire preparedness, Secondary Water Sources and Source Water Protection. WYDEQ; USEPA; Wyoming Homeland Security, Mission Critical Global Alliance, Sanner IT, Wyoming Machinery, our new Duckweed skimmer, Aktivov Asset Management, Carl Brown Getting Great Rates, the Lead and Copper review with 120Water, SunCoast Online Learning, Gauge the leak detecting dog, SLIB and USDA on funding updates and all of our valued exhibitor/presenters. Reading all of this, now that's value for your training dollar!!

We also had a great Best Tasting Drinking Water in Wyoming contest and one of the closest. The Town of Chugwater made another visit to the finals while Grand Targhee Resort made its 8th trip to the finals and The Town of Ten Sleep made its 4th while The City of Rawlins made a 2nd trip in 3 years. Congratulations to the Town of Chugwater for their 2nd win. I am hopeful that we will be able to travel to Washington, DC in February 2023 to watch Chugwater compete in the Great American Taste Test. A reminder that Ten Sleep

took home the Silver Medal at this year's national contest!!

Again, Thank you too all. Hope you enjoyed your week and even learned something. See you at one of the "mini conferences", virtual trainings or next year for our 32nd Spring Training Conference scheduled for our traditional Spring dates, April 18-21, 2023. Mr. P.



Senator John Barrasso, Gauge, the leak detection dog, and his mom, Pam.



Pre-Conference



Back row: Nichole Clark and Lance Wedemeyer, Chugwater; Glenn Pauley, Mikki Munson, Jackie King, and Phil Combs



Jorge Pacheco (Zenner), Nichole Clark (2nd Place), Lance Wedemeyer (1st Place), Mike Medici (Zenner)



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For Immediate Release

March 30, 2022

Contact: Mark Pepper (307-436-8636) or (307-259-6903)

Ten Sleep water takes home the Silver Medal

(Washington, D.C.) – Wyoming's drinking water entry, The Town of Ten Sleep, took home the Silver Medal today at the 23rd Annual Great American Water Taste Test. Throughout the year, utilities from across the country vie for a spot to represent their state during the National Rural Water Association's Rural Water Rally each year in Washington, D.C. GAWTT is the nation's most prestigious competition for the best tasting water in the United States.

Each state holds their own competition at their annual conference and the winner of the statewide contest moves on to compete in the GAWTT. This year, NRWA received 37 entries from across the country. During the Rural Water Rally, the preliminary judging narrowed the field of contestants to the top five.

The top five finalists were evaluated by industry leaders: Charles Stephens, Assistant Administrator, Water and Environmental Programs, USDA Rural Development; Mikayla Bodey, Professional Staff Member, Senate Committee on Agriculture, Nutrition, and Forestry; and Anna Lanier Fischer, Professional Staff Member, Senate Appropriations Subcommittee on Department of Labor, Health and Human Services, and Education, and Related Agencies.

Wyoming Association of Rural Water Systems Executive Director Mark Pepper, Wyoming's National Director to NRWA, Chuck McVey hosted the state winner in Washington. Mayor Ernie Beckley from the Town of Ten Sleep brought their state winning sample to Washington, D.C. They entered the national water taste test after winning the state competition at the Wyoming Association of Rural Water System's Annual Conference, their third state win in the last 8 years. In addition, 2021 state top 10 finisher, The City of Rawlins was represented at the event by Stevie Osborn from the Water Treatment Department and a participant in the Association's registered apprenticeship program.

The 23rd Great American Water Taste Test Gold Medal Champion is Lake Egypt Water District from the great state of Illinois.

Third place and the Bronze Medal went to Village of Bloomington Water Department from Wisconsin. Rio Embudo MDWCA from New Mexico and the Wapello Rural Water Association from Iowa rounded out the top five finalists.

Wyoming's entries have finished at least in the top 10 for the last 17 years with the Town of Afton placing in the top five in 2005 and Aspen-Pines Water and Sewer District winning the gold medal in 2017. Each judge evaluated glasses of water from the state finalists evaluating them on clarity, bouquet and taste.

Every year, the National Rural Water Association sponsors the Rural Water Rally and Great American Taste Test on Capitol Hill to give utility and state officials an opportunity to visit one-on-one with their Congressional representatives and discuss key water and wastewater issues. Wyoming's entrant met with Senator Barrasso, Senator Lummis and Representative Cheney to discuss water quality and quantity issues facing all Wyoming rural systems. In addition, the delegation met with key officials from the Department of Agriculture, Department of Labor, Bureau of Reclamation and the EPA to discuss water industry issues for Wyoming.

###



Left to right: Charles Stephens, USDA; Mikayla Bodey, Senate Committee Staff member; Mayor Ernie Beckley, Town of Ten Sleep; Executive Director Mark Pepper, WARWS; Anna Lanier Fischer, Senate Committee Staff member

D.C. Trip

by Stevie Osborn, Apprentice

Mr. P has asked me to write and tell you all about my experience in Washington D.C. I don't do this kind of a thing often so please bear with me.

Well, where do I start? It was absolutely amazing to meet and interact with operators from all over the country. What a sense of comradery I felt, as I sat and listened to the many people that laughed and talked like old friends, playfully jabbing at each other about which state is better. It had a way of putting my nerves at ease, allowing me to feel comfortable enough to interact and become part of the conversation - they were all so welcoming and friendly. We talked water, wastewater, moving through the ranks, how one got into the industry, fishing, hunting, and so many other topics. With Mr. P, Chuck and Ernie by my side, enjoying and conversing with any ready and willing person; my shy self-conscious shell was cracked.

What an incredibly interesting group of people these 'water people' are. This trip just re-enforced what I have already come to believe, that this industry is one of the most welcoming and fascinating industries that I could ever have imagined. I spoke with people from numerous states, all ready to tell their story and give industry advice.

When it came time for the Great American Water Taste Test, everybody was enjoying themselves and was genuinely happy for the community from Illinois that won. I know that when the gentleman from Illinois spoke of the pride he had for himself and his small crew; everybody in the room was

proud of them also. He talked about making it through the hard times and the challenges his facility has faced – it was a well-deserved win.

Ok...I will move on now and stop gushing about how cool everybody was and tell you about talking with our Congressional delegation. Was that ever an experience! Being able to meet the people who are doing their best to remind our nation's decision makers that small communities need their help to continue to collect and produce clean water on either side of the faucet was eye opening.

I had the opportunity to meet and speak with Representative Cheney, Senator Lummis, and Senator Barrasso. Ernie from Ten Sleep and I were able to do a small bit of bragging about Wyoming's water systems. We had a chance to tell them how important their backing of funding is for systems and towns like ours. Considering Rawlins has been getting pulled through the ringer when it comes to our infrastructure and finding the grants, and just dollars in general to help us do the critical updates, we recently found it was nice to hear, money is available.

They were all very understanding when it came to discussing the inflation of everything we need to keep our facilities running smoothly, whether those things are everyday items



Mayor Ernie Beckley, Town of Ten Sleep; Stevie Osborn, Apprentice, Town of Rawlins; Chuck McVey, WARWS National Director

or emergency needs. They recognize that our costs are going up and are willing to help us get our “fair share” (for lack of a better word) of the funding support that is available. Let’s hope these conversations can really make a difference for the small communities around Wyoming.

I can tell you firsthand, Congress knows Rural Water and the people who work at WARWS and all the State Associations!! I was also able to speak about something that really gets me excited... (Well, to be fair, I get real excited talking about water in general): Wyoming Rural Water’s Apprenticeship Program! Mr. P, Chuck, Ernie, a whole lot of other people and a couple of Irishmen (that’s not a joke) learned this about me and witnessed it firsthand. No shame in my water game! But like I said, something that REALLY gets me excited to talk about is the Wyoming Rural Water Apprenticeship Program for water and wastewater operators! If you ever get bored and want to see a girl ramble on and on with a big goofy smile the whole time, come and ask me about the Apprenticeship Program. This is a program I am beyond proud to be a part of, and if I’m lucky Mr. P and Riata will let me help where I can in years to come.

Anyways, back to the main story, talking to our representatives about this program went very well! I do believe I expressed why and how this program is so important, not just for our state but for every state; and why it is so important for them to continue funding this program. We need the money now so we can get the younger folks on board before we lose our seasoned mentors. We need all the people who have worked in this industry for many years to pass as much of their knowledge on to newer operators. For many systems it is a struggle to find or retain new operators due to monetary restrictions. Not all facilities can pay what (well...if I’m honest) an operator really deserves. Extensive, well-rounded training is just something many small communities can’t provide without help from a training program like this. As much as I’d hate to see many faces go, it is what is going to happen because people are going to retire or die. We need new, motivated, and passionate people to get that jump start in the industry under the mentorship of seasoned professionals. And now our Congressional delegation knows just how important the funding of programs like this is to our small towns. We need quality operators handling our drinking water and protecting our source water.

I was also fortunate enough to meet Anna Lanier Fischer, she is the young lady that wrote the apprenticeship legislation for the Senate Appropriations Committee. What an honor that was for both of us, she worked very hard for this program to come to fruition, and I was the first apprentice she has met to hear how her effort in drafting the legislation is being put to use. How cool is that?

We met with many of the National Rural Water people and got to see and hear how well thought of Rural Water is to Congressional and Administration Leaders. I was able to

hear Sen. Manchin from West Virginia; the Administrator for the EPA Office of Water (Kathy’s training program); the Acting Administrator of the USDA Rural Utilities Service (circuit rider funding) and the Deputy Assistant Secretary for Water and Science at the Department of the Interior. I also got to meet Mr. Simpson (that’s a new article I could write, everybody in Washington knows Mr. Simpson).

To close this out I will say, if you ever get a chance to go to D.C. with Mr. P to talk to our delegation – do it! I was able to visit historic Union Station, wander through a tunnel from one Senate Office Building to another, visited a couple historic restaurants, saw Capitol Hill up close and how it all works (or is supposed to), saw how hard all the state Rural Water Associations fight for all the water systems in the country, and even had a very fun late night trip to an Irish Pub with rural water folks from several states.

As I found out, our delegation is extremely accessible, even in airports and they want to know what is helping you or (with a smile) what they could do to help. Share your story – it could help us all in some way. And please share your story with younger folks, you never know who might be interested. Let’s talk about what we do for a living because we are not always recognized for what we do, but what we do is something to be proud of. We are, YOU are, the backbone to society! Be proud of it, you might just influence the next generation of operators!

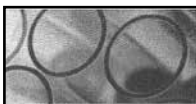

Whoa! Ok I have thrown a lot your way. I hope it was all reasonably understandable and you were able to follow along to this somewhat messy, but incredibly honored, Water and Wastewater Operator’s mind.

Thank you,

Stevie Osborn
Level 3 Water Operator
Level 1 Wastewater Operator
City of Rawlins

To learn more about the Apprenticeship Program please contact:

Riata Walker
Apprenticeship Coordinator

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Going the Extra Mile

Traveling around the state, I see many small towns going the extra mile for their communities. This goes way beyond the midnight call outs, on a weekend, when it's 20 below, fixing a water line break. Then of course being out plowing snow in the middle of the night, keeping the roads cleaned off.

Of course, doing all the unsung tasks that make our Wyoming operators the best around. I'll single one town out, of many amazing towns across the state, that would be the awesome Town of Marbleton. A very well-run town from having a great Mayor & Council to the entire office staff and operators. They work as a team providing for the needs of their community. I see so many other towns that have just the opposite, Mayors & Counsel vs. operators – never ends well. There again, I think most operators already have-been there done that.

Marbleton is just like so many small towns that went above and beyond during the 2020 wreck of COVID. The community pulled together and made the best of a mess that hit Wyoming so hard. I, for one, still remember all the restrictions we had in place, and the hardships we all endured. The local grocery store limiting only 10 people in the store at once. Once in the store finding limits on items, or shortages on everyday items we all take for granted. The hardships the Town employees went through, being separated- working alone to help stop the possibility of having multiple cases of COVID hitting at once.

All the mask restrictions and the mandates which would be too many to list. Through all of this, the team kept the Town running as usual. Lessons were learned and implemented for future unseen issues that may hit the USA at any time. Especially with the uncertain times we are living in. Are we ready? Some of the small towns in the area have already fallen back to winging it, so to speak. I'll leave that for another time, sometimes ya just can't fix that mentality, even with duct tape.

As winter is fading and some warmer days are here, Marbleton also goes out of the way to provide some amazing fishing opportunities for the community. This year it was the "Kiss the Fish Derby". A few years back the Town came up with the idea of building a fishing pond for some added activities for everyone to join in on. If I recall right, this was the third fish derby the Town has put on. The first one they had was a little brisk to say the least! However, with a roaring fire, and

some hot drinks, the brisk day was a success. Many children walked away with huge smiles matching the beautiful fish they caught. The smiles on all the faces both young and old, were a sight see.

This February was a lot warmer for the derby, and a good time was had once again. The pictures in the local newspaper said it all, with pictures of families having a great time. In my opinion, a day on the ice with friends and family, catching fish, drinking hot drinks, and chowing down some free chili dogs just can't be beat.

I, for one, love fishing and having a well-stocked fishing pond just up the road is like cheating because it's more like catching than fishing. I sure can say it beats some of the other type of ice fishing days I've had the displeasure of sharing.

I would like to thank not only Marbleton, but every single town that goes the extra mile for their communities. As I travel around the state getting to know the operators and staff of some of these towns stand out in their own ways. Town pride shows, and if ya look hard enough, the unsung heroes can be seen. Now if we could only fix the ones that need more duct tape.

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Goodbye Yellow Brick Road

My time to retire from the water industry is coming soon. I tried this before 4 years ago, but my love of this very important job brought me back. Thank you, Mr. Pepper, Wyoming Rural Water, and its exceptional staff. My time with the organization was amazing.

WARWS is the number one organization that keeps you, the water system provider, up-to-date on all the rules and regulations that are being imposed on you every day. Their knowledge and commitments are far above the rest of the organizations in the field of water and wastewater. Please use them to enhance your knowledge and understanding of our ever-changing landscape.

43 years ago, I started working as a town employee. My job included operating the water and wastewater systems along with maintaining streets, parks, and anything else that needed to be done. Along the way the town promoted me to Public Director, which was a position that allowed me to be more involved with town governing operations. Dealing with other organizations, the state and federal government, and the public put me in the perpetual glass house. Where everything I or my family did was open to the public. I loved every minute of it.

But before I go, there are a few thoughts I want to expand on. Some new and some old, that will affect your systems in many ways. Both Administrator's and operator's will be taxed to complete the new LCRR regulation's, Sanitary Survey and Hiring and Retaining Employees. Please indulge me while I go over these very important topics.

Lead & Copper Rule Revisions (LCRR) It becomes law in 2024: 2020-2024 Stage 1 – Inventory (what is in the ground?)

The requirement of this stage is to review all electronic data, written notes, personal memory, and sometimes potholing the service line from the meter or curb stop to the building foundation. And to record the type of material that has been used in your system prior to January 1, 1987.

In 1986, the Lead Ban Law was enacted, and all lead was to be removed from all pipes, connections, fixtures, valves, and everything that had previously included lead during the manufacturing. The law gave manufacturers/dealers an extra year to remove and unload the supply line. This extension

was up at the beginning of 1987. It is my understanding that your requirements for the buildings and service lines built after this date is to record them as Lead Free unless you are not sure!

That said, if you can visually see the line leaving the meter or curb stop as copper, pex, poly, etc. and visually see the other end of pipe, within the crawlspace or basement, as the same material you can reasonably be assured it has no lead. Unless you have knowledge of a break or disruption of the original line. By knowing the type of material and sharing your information with your public will provide an avenue for good relations.

If all the rules and requirements are mindboggling to your system as to "Where is the money or employee time coming from to do this?"

There is help, this rule comes with money through the Infrastructure Bill that was passed by Congress. You can apply for funds through the SRF state funding office or other agencies. Or, if you want, there are businesses that will contract to do it for you. 120Water.com is a service agency that WARWS has vetted to be among the top companies to handle the process for you. As a member of Wyoming Rural Water, a 10% discount is being offered by them.

Whether you take it on yourself or contract it out, DON'T wait, start your data collection now! You have 2 years to get it done, do a section of town when time is available. Until EPA Region 8 produces an official form that we must use, start your own spreadsheet. Number each lot in town and start filling in all information you know about it. It will not be hard if you take a bite a little at a time.

November 2024 Stage 2 – Site selection for LCR sampling: In this stage all systems will be provide a new sampling site form from EPA. It will be a bit different than the old form regarding the Tier Identifiers. The inventory part of the new rule is to verify the sampling sites that you select for sampling. Based on your internal spreadsheet data records, you will be able to be confident in the building tiers you identify as lead problems. Schools and Child Care centers will be closely scrutinized due to this new rule.

November 2024 Stage 3 – Sampling update:

This stage will coincide with the stage 2 as it relates to sampling. The method will be revamped to include 5 numbered sample bottles from the sampling tap. This change will negate the first draw requirement that we have used in the past. You or your appointee will take the sample at a time that you have set with the building owner. Because it is suspected that the 5th bottle of water will be the true representation of the system's water being delivered. Our sampling is to see if Lead is in the water not the house fixtures and this change

to the way we sample will show if Lead is present in our distribution system.

Remember this, the new regulation is a cry out from the public not the government. Our public need to know and we need to know. Having a good inventory of your systems material and sharing your knowledge to the building owner, your system could be finically absolved from liability if a problem arrives regarding water quality.:

Sanitary Survey Deficiencies

During the past 2 years all information regarding the Sanitary Survey process has been a quire mire. EPA has been under stay at home orders and working from home. Like many other organizations delays and lost data has been a fact of life. New EPA employees do not know your system as they have in the past. Communications are now routed thru a central router and not to the direct person that you emailed, or snail mailed. You must have the message identifier in the subject line and your WY ID number as well when trying to submit your information.

During the past 3 years I have noticed that a large number of the SS deficiencies have been a communication problem. CCR's that are missing or incomplete certification forms from previous years still must be filed for that year. I know this is a continuous point that seems to be ridiculous but in the public's eye it is not. Consumer Confident Report is our way to tell each water user the quality of the water we provide and how important we think our job is.

If you receive a Sanitary Survey Deficiency Letter, the best thing is to contact the EPA case manager. Have a conversation about the What, Where and the Why, and the reasoning for the request. By doing this, you have started a conversation that will lessen the derogative follow up letters. I have helped many systems complete their SS problems and feel that with the new proposed Chapter 12 revisions a lot of the continuous requests can be addressed.

And I also feel that EPA has understandably agreed that local water and wastewater operators should be the contract surveyors. Hopefully, we will have waivers and upgrade extensions to these deficiencies that require changes to our systems. I believe that if a system has provided good quality water for many years utilizing the design concept that was originally permitted be allowed to temporarily correct the deficiency anyway possible to safeguard the system. If and when an upgrade to the system becomes necessary, all the new requirements would be installed. Case in point the requirement that the surveyor must see the gasket of well heads or tanks that DEQ has permitted in past years. All gaskets are designed to keep contamination out of the well or tanks and were installed by the original contractor. If the wellheads or vaults are required to be opened to satisfy the

inspector, it compromises the unit by breaking the seal. If a contamination is reviled during the testing process, then steps to mitigate it would require the seal to be opened and corrected not before.

Each deficiency report has the forms and information that you need to fill out and resubmit.

Employment and the Retaining of good Employees

New employees in our industry need to be trained in how the job has been done in the past but be allowed to give input based on their own knowledge. Training needs to evolve as new processes are discovered. Employee's that require a license to obtain or retain employment are having difficulties in the memory styled testing. I believe, as many others in our industry that an open book test needs to be instituted. In today's world of information that is available to our employees the way we require testing memory is acratic as best. Our new employees learn more by finding the answers than being required to memorize data from a book. Think about it. I hope Wyoming DEQ will.

Employee compensation must be addressed if we want to fulfil the overwhelming loss of employees. Retirement and job dissatisfaction is creating a void in our ability to maintain quality systems. It is time to acknowledge that the employees of your town or system are the most important asset you have. Your operators and employees are the backbone of our communities. They are the ones that interact with the public, daily, far above the administration. As high-quality Blue-Collar Professionals they deserve the respect and compensation they are afforded. I know small systems are hard pressed to raise the salary range equal to other industries, but we must try. Your home-grown employees have the heart-beat of your towns. They want to work to provide a living for their families and future within the community. Our salaries must be in line with your water rates. If you need to increase the salaries within the water or wastewater system to retain or recruit good employees, you might have to raise your water rates. The days of picking a water operator off the streets or from another state is over because of the cost of living and inflation has outpaced the average salary. A certified water operator is your first line of defense when it comes to health and lives of your public.

Thank you for the opportunity to know you and interact with you over the past years. As of May 31, I will be existing my life as a Circuit Rider and entering a life dedicated to my family and myself once more. I am 75 years old now and it is the time to close the blinds and spend the next 25 years (Hopefully) looking ahead.

So, I will see you at that great fishing hole on the river, or on the 19th hole of a golf course, or while flying my hang glider above the beautiful Wyoming landscape

Operators Corner

Wastewater Questions by Mark Court:

1. What factors could change a preventive maintenance schedule?
 - a. Changes to employee break schedule
 - b. Preventive maintenance schedules are not changed once set
 - c. Problems solved and found
 - d. Wastewater treatment plant adjustments
2. What can produce harmful and obnoxious gases in the collection system?
 - a. Air Curtains
 - b. Scouring velocity
 - c. Solids buildup
 - d. Turbulent flows
3. What factors will prevent odors in collection systems?
 - a. Low-velocity flows, warmer wastewater temperatures and long transmission lines
 - b. Hotter weather, flatter sewers and longer flow times
 - c. Operator overtime, frequent breaks and a robust retirement plan
 - d. Proper design, cleaning and maintenance
4. Which method is a hydraulic sewer cleaning method?
 - a. Bucket machines
 - b. High-velocity cleaners
 - c. Hand rodder
 - d. Power rodder
5. What is an air gap?
 - a. A connection between drinking water and an unapproved water supply
 - b. An open vertical drop or empty space between a drinking water supply and potentially contaminated water
 - c. The top or highest point on a piece of equipment or facility
 - d. The vertical distance, height or energy of water above a reference point

Water Questions by Michelle Christopher:

1. An Oxidizing substance such as oxygen or chlorine will:
 - a. Readily lose electrons
 - b. Remain neutral, regardless of electrons lost or gained
 - c. Readily accept electrons
 - d. Neither gain nor lose electrons
2. True or False: changes in flow through a distribution system will increase corrosion.
3. A customer complains of "red water." After investigation, you find that a near-by valve was recently opened in the distribution system after being closed for years. What is the cause of the "red water" and what should you do?



- a. Excessive chlorine has caused biofilm to slough off the pipe walls. Tell the water treatment plant they must lower the chlorine dose
 - b. Changes in flow in this area of the distribution system has caused iron deposits to break free from the pipe walls. Perform a directional flush of this area of the distribution system to remove remaining iron deposits and tubercles.
 - c. Opening this valve has created a cross contamination event with another part of the distribution system. Close the valve.
 - d. The "red water" is caused by routine fluctuations in groundwater quality. Tell the customer that this is completely normal and not to wash whites for a few days.
4. When maintaining records, it is best to:
 - a. Maintain copies of water quality in paper and electronic form, for the time period that the regulatory authority requires.
 - b. Destroy all records after sending to the regulatory authority.
 - c. Never allow the public to access your records.
 - d. Only maintain a paper copy of your water quality records for cyber security reasons.
5. What is the wire to water efficiency of a pump if the water horsepower is 7.2 horsepower and the power input is 11.1 horsepower?
 - a. 55%
 - b. 60%
 - c. 65%
 - d. 70%
 - e. 75%

Answers
Wastewater
1. C 2. C 3. D 4. B 5. B
Water
1. C 2. True 3. B 4. A 5. C Wire to
Water Efficiency, % = $X \frac{100\%}{\text{round up}}$ to 65%)

Documenting Sanitary Survey Significant Deficiency Corrections

You survived your sanitary survey, and you received the dreaded news that you have significant deficiencies that require correction. Take a deep breath, you are not alone. Currently there are 215 outstanding significant deficiencies in 86 different Wyoming public water systems. Here is the rub. You believe that many of these significant deficiencies have been corrected, but the corrections have not been properly documented so EPA can close them out and the system can move on to the next challenge.

You can make this happen by effectively communicating with EPA, providing documentation that can be understood, responding to email messages from EPA and following up on your submittal.

The process begins when you receive a Sanitary Survey Report from EPA informing you that significant deficiencies were identified based on a sanitary survey of your water system. You will have six months to correct the deficiencies and provide documentation of correction to EPA.

This is where the communication needs to begin. Do not ignore the significant deficiencies. They aren't going away by themselves. Get a plan together and contact Matthew Langenfeld at Langenfeld.matthew@epa.gov. Make sure to say in your email that you're responding to significant deficiencies and include your name and phone number, the system's PWS ID# and the name of the system. Make sure you can explain how you are going to correct the significant deficiencies. Be aware that you may need a permit from WYDEQ to make the corrections.

Call your District Engineer to make sure. Here is the link to the District Engineers <https://deq.wyoming.gov/district-offices>. If you need a permit, it may take more than 6 months to correct your system's significant deficiencies. If you need an extension, send an email message to Matthew Langenfeld at EPA. Provide the PWS ID# and the system name in the subject line of the email. Identify those specific significant deficiencies that an extension is requested for. Describe what you've already done to address the deficiencies and why you are requesting an extension.

Obtaining a required WYDEQ permit is likely a good reason. Not prioritizing correction of a significant deficiency is not

a good reason for an extension. Provide a new recommended date for completion. As a backup, be sure to also copy your email to r8dwu@epa.gov when sending it to Matthew. This will help to ensure that your email message is properly delivered. Sometimes email is lost if an incorrect address is used or goes to trash or junk mail. You will receive an email response to the extension request. Keep EPA in the loop as you get your permit or as you begin your correction. Don't make them guess what you are doing.

Once you have made corrections, you need to document completion and submit it to EPA. This is where many mistakes are made. The **Correction Notice** form can be found at www.warws.com under downloads water or <https://www.epa.gov/region8-waterops/significant-deficiency-correction-notice>. This form needs to be completed and EPA notified prior to the due date and within 30 days of correcting each significant deficiency.

Keep communicating the status of significant deficiency correction activities to EPA. Be sure when you fill out the **Correction Notice** form that you include pictures of the correction. Make sure that each picture is uniquely numbered and listed on the correction form under the applicable significant deficiency. Place the PWS ID# number for your system at the top of the Correction Notice form. Do not place this number in the facility box in the table. A facility is a component of the water system. The PWS ID number uniquely identifies the system.

In the box that says facility, place the item that you are correcting such as storage tank or well and any facility ID numbers like ST01 or WL01. In the Significant Deficiency box in the table place the number of the significant deficiency that is in the Sanitary Survey report you received and the description of the significant deficiency. Be sure to include your WYDEQ Permit # on the form along with a copy of the permit. If no permit was required, include "Not Applicable" in the table. **Included in this article is a correctly completed Correction Notice form.** Please use this as a guide.

Proof that significant deficiencies have been corrected through proper documentation is required. Pictures can be an effective way to demonstrate completion. Make sure that pictures are clear and adequately show the correction. Include a tape measure in pictures to demonstrate distance and scale. A clear picture of a tape measure held up to 24 mesh screen helps to show that the mesh is the correct size. Make sure that the tape measure is readable in the picture. Include close-up pictures of what has been corrected along with pictures of the entire area.

Overflow pictures should show the distance from the ground to the bottom of the pipe with a tape measure; 24 mesh with tape measure, duck billed valve or flapper valve; and a picture of the entire overflow area including splash plate, rip rap or structure. Make sure that each picture is uniquely num-

bered and that the number of the picture is included on your Correction Notice form.

Correcting significant deficiencies on tanks and documenting the corrections is worthy of an entire article unto itself.

A tank may receive a significant deficiency if the surveyor is not able to access portions of a tank due to safety concerns or if they can't find an overflow or drain. If this happens, you will need to fill out the **Storage Tank Finished Water Inspection & Cleaning Checklist**. Any deficiencies from the checklist must be noted and corrected. This checklist is totally different from the significant deficiency correction notice form. You will need to fill out both of these forms. You can find this checklist at www.warws.com under downloads water or <https://www.epa.gov/region8-waterops/finished-water-storage-tank-inspectioncleaning-checklist>.

It may be helpful to have a second set of eyes with you when you attempt to fill out this form. Please reach out to one of our Circuit Riders. They will be more than happy to help.

We are all here to help. Let's give EPA what they need in the format that they need it in and clear up all these significant deficiencies. As Martha Stewart says, "It's a good thing!"



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Water ~ Our Most Precious Resource

Taking Water Resources for Granted

It has been said the “*Whiskey if for Drinking and Water is for Fighting.*” It has also been said that “*We never know the value of water till the well is dry.*” These two quotes could not be truer. Since the beginning of time, humans have fought for the right of the basic necessity of life despite the rights of others. Without water, life is non-sustainable. In our world we often take water for granted. This also includes the western arid and semi-arid regions of our country.

We waste water as if the well will never go dry. We over-irrigate our lawns because we want the greenest lawn in town. We grow cotton, corn, and other crops in the deserts. We establish golf courses and other high water use recreational facilities in regions of the country where they just should not be. We replaced flood irrigation with a more conservation friendly pivot head irrigation system but are now finding that the lack of flood irrigation means the lack of groundwater recharge. We have cities with populations much larger than their natural water supply can sustain and are now tapping into the oceans or getting water from the other side of the Continental Divide just so we can sustain the population we have as well as future growth.

Yes, we as Americans take water for granted. We do not think about where it comes from or how it is treated. We do not care about how much we use in a day. We especially do not consider the fact that our water resources are rapidly depleting every day. All we care about is that we can turn on the faucet and we can expect clean safe drinking water.

The same is said about the water that we have used, and we do not want in our homes. If the toilet flushes and the sinks and bathtubs drain, who cares? Where the water goes once it leaves your house is no longer your concern. Besides, that water becomes my downstream neighbor's concerns, so it really does not matter. Yes, we are a privileged, self-absorbed society that is only looking out for number one. What goes on outside of each of our individual worlds is of no concern right? It is. The mistakes made in the past are impacting us today. This is why there is a Clean Water Act and a Safe Drinking Water Act. Keep in mind that the mistakes we make today will impact our children and grandchildren tomorrow.

The Vicious Cycle of Poverty

In other parts of the world, many people struggle to survive because of the lack of clean safe drinking water and adequate sanitary conditions. And yes, if you look hard enough, you will find this struggle in our own country and in our own states. According to the World Health Organization and UNICEF, nearly 40 percent of the world's population lacks clean safe drinking water, and the lack of adequate sanitation is the cause of most of this.

Just imagine what our world would look like without clean safe drinking water and adequate sanitation. For us, it is difficult to fathom because we were born into a society of having the luxuries of water being piped into our homes and wastewater being flushed away to a treatment facility. In our convenient world, the adverse conditions of unsafe water and inadequate sanitation were not all that many generations ago and not too many generations away from returning unless we truly examine our individual footprints and change our wasteful ways.

To get a better understanding, let's take a look at the vicious cycle of poverty and how unsafe water and lack of adequate sanitation are at the forefront of poverty. In many parts of the world, waterborne diseases such as dysentery, cholera and typhoid are on the rise, which is often the result of raw sewage flowing directly into the rivers and lakes which are then used as their water sources.

About one-half of the hospital beds in developing countries are occupied by people with water-related illnesses. These preventable waterborne diseases keep children out of school. In other words, the lack of clean water and sanitation leads to the lack of education. It is estimated that in poverty nations, 443 million school days are lost each year due to water-related illnesses. The lack of clean water has serious effects on student academic performance.

Even the students with the best academic performance begin to lose their motivation as they deal with stomach pain and diarrhea from these water related diseases. When teachers get sick, there are no substitutes to fill in. There is no other choice but to cancel school for all the students. This correla-



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tion means that the lack of clean safe drinking water and sanitation equals the lack of education. This in turn results in the inability to develop as a society which will continue the vicious cycle of poverty.

So, after reading what you have read in the previous paragraph and think it's bad, the water crisis gets even more doom and gloom if you are a girl. When their parents become ill, girls must take on the primary responsibility of fetching water. If a family loses both parents and the children become orphans, the oldest girl must take on the many responsibilities that her mother would otherwise perform which will take away the necessary time for an education.

In the sub-Saharan region of Africa alone, there are forty billion productive hours lost each year due to water fetching. Every day, every woman and young girl is expected to travel by foot more than four miles one way to carry more than forty pounds of dirty unsafe drinking water. Again, this obviously leaves little time if any for education. When these young girls reach puberty, they tend to drop out because schools lack proper toilets and necessary conditions. Without a proper education, there is little chance of improving one's situation later in life.

Waterborne Diseases-Global Death Toll

The leading cause of death worldwide is not heart attack, or stroke or cancer. The leading cause of death worldwide is the

result of waterborne diseases with the majority affected being young children. Approximately four thousand children die from drinking dirty water daily. This is four thousand too many. Nearly forty percent of the world's population, particularly those in Asia and Africa do not have access to clean drinking water. This is an absolute tragedy. In India, the average person loses seventy-three working days annually due to waterborne diseases. Out of all waterborne illness, diarrhea is one of the leading killers with sixty percent of all deaths are diarrhea related. At any given time, nearly half of the developing world's people are infected with one waterborne pathogen or another.

Waterborne Diseases in the United States

Here in the United States, waterborne diseases are occurring more frequently than we you may realize. We are seeing many cases of listeria, giardia, and cryptosporidium. In 1993 in Milwaukee, Wisconsin, the nation experienced its greatest waterborne disease outbreak that sickened more than 403,000 residents with at least 104 known deaths. Unless we begin to take our water resources more seriously, waterborne diseases will continue at an alarming rate in our nation. This means protecting and conserving our water sources, replacing aging infrastructure, educating your constituents, and developing better management practices. If we fail to do so, we could, in future generations battle with the same issues that developing nations are battling with.

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A Conversation Between a Younger Circuit Rider and an Older one - Old School or Automation or Both?

Ross: Michelle, you bring up that the next topic in our conversation would be, "Social Media vs town hall meetings". By the way, I did notice in your email that you capitalized the spelling of Social Media but not town hall meetings. Are you sure it shouldn't be written "Town Hall Meetings vs social media."? Well, here we go, maybe. Social Media, I don't do it unless I have to for work. I will say though that my wife very much enjoys your postings on the WARWS Face Book site particularly if your dogs are part of it. Since I don't even have a Face Book account, I take her word that you do an excellent job managing the social media part of WARWS.

(*Cue phone call from Ross to discuss article)

Michelle: Ross, why can't we do this over text? Honestly – talking to people over phones is just weird and awkward and should be avoided at all costs. However, in my professional world, I do answer my phone. My personal phone? There are few individuals, (you included), that I actually answer the phone for. Everyone else? If you don't leave a message, don't expect a call back. (Yes, I completely understand the irony since I HATE leaving voicemails!)

Ross: Over text? You know I have an old-fashioned flip cell phone and have to push the 7 button four times to type a "S"! Besides, I like hearing a person's voice, it reminds me of what you look like, and I get a sense of what your emotional state of mind is at that moment to help me understand you better. In my professional world I do answer the phone and don't look to see who it is first because I may need that reminder that my vehicle warranty expired 15 years ago. But seriously, being on the road as much as we are, I would rather listen to the voice mail and call back, using hands free of course, instead of sitting on the side of the road texting.

Michelle: The hands-free option is called "Speech to Text", Ross. Although you do have to make sure it doesn't send something inappropriate! Back to the professional world. There are so many methods of communication, and they are used in varying degrees by the seven generations currently living in our world. While we can paint broad stripes and say older generations are leery of technology, and younger generations see it as normal and older versions of communication such as phone calls and flyers as suspect, it often

comes down to a matter of personal preference and convenience. So, given that as water professionals we are facing what may be the greatest communication challenge of our career (the Revised Lead & Copper Rule), how do we make sure that we are communicating with all of our customers, and that they have the opportunity to communicate with us?

Ross: You are absolutely right. We do need to use every communication avenue at our disposal however someone like me that would rather use snail mail would not be the one who can communicate with the tech savvy person as well as you could.

I'm glad you brought up the Revised Lead & Copper Rule. I believe that although the great operators of our state will soon get a real grasp on what is expected of them in the rule once they get the information from our Primacy Agency, EPA Region 8. It is the discussion makers, council and board members that would benefit greatly by face-to-face communications from our WARWS team. We both know that there are too many Mayors, Council, and Board members have the tendency to not really listen to their Water Operation Specialists.

Case in point, I visited with an Operator and the Mayor about the rule. The operator knows that changes are coming. The mayor, on the other hand, was quite upset at first about gathering information on the private side of the service line. After discussing what the rule revisions are about, he decided that the sky was not falling and that most of the required information for system owned service lines they already know and was relieved to learn that the rule acknowledges that the private side could take longer to identify. I believe that on-site was the most beneficial for that small water system and there will be some that will need that personal touch also.

Michelle: This is definitely an "all hands on deck" situation. Water Operators, Clerks, and Decision Makers all need to know what is coming and be able to communicate a consistent message to their customers. We need to utilize all forms of communication, from high tech to traditional. Old-school forms of communication such as flyers in water bills or public postings in newspapers fulfill the federal requirements of public notification, but I seriously doubt that these methods reach our customers in a meaningful way. I know I tend to

Dan Paulson
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toss extra paper attached to my bills as part of the Christopher Paperwork Reduction Act. I have become a confirmed reader of public postings in the newspaper though, particularly in the legal notices section. Alas, I fear it's a hazard of the trade, and a sign that I'm getting older.

Ross: You're not getting old, just wise. It is a State of Wyoming law that municipalities, counties, and special districts including school districts publish official minutes of meetings in a local newspaper that they have to name. This makes for a good place to begin educating the public when issues like the changes to Lead & Copper Rule is discussed at the public meeting. I also dislike all the extra notices that come with monthly bills but have learned to read them, so I don't look or sound foolish when complaining about an increase and the answer is always "we informed you last month as part of your bill".

And yes, this does not always reach those that really need to know. What I hate is when I hear that the government should have taken care of something, **WE ARE THE GOVERNMENT!**, at least for now. OK no more ranting.

Michelle: Reaching the fringes of the population is always difficult. However, we have a duty to these customers who may not get a bill to keep them informed of what's in their water. This is where social media can help. Many communities have created Facebook pages, to varying degrees of success. This reaches some folks, but there's those that think all social media is the devil, and those who think Facebook is an old person's social media. There are difficulties in these pages, particularly striking the correct tone, and making sure the information is accurate and timely. Another issue is refereeing arguments online. I think it's easier to be mean when you're not looking directly at the person.

Ross: As I stated before, I'm not a fan of Facebook, but for those who are I hope they attempt to search things out for what is really fact and not fiction or someone's platform to act like a fool. I prefer official web sites and I'm willing to search for the water/wastewater system's web site for information and updates. Most of these sites give the opportunity to comment and ask questions through email.

Michelle: That is one hazard of the Information Age that I think younger generations are more adept at. As a member of the most awesome generation, The Oregon Trail Generation (we're a sub-set between the Gen X-ers and Millennials), we were born with a skeptic eye, general distrust of authorities, and a need to fact-check all information sources. Regardless of your personal stance on social media, it is important for communities to use this communications tool, because like a wise trainer once told me, "If you're not telling your story, someone else will."

Ross: Tell me of your take on Virtual Meeting (ZOOM, TEAM...) Personally I would rather not but again in our

profession we don't always have a choice. Lately most attending or appear to be there have their screen blacked out and mic off. Are they really there? Am I really there? No one knows for sure.

I fear that this is becoming the norm and personal meetings fading away. You and I are back at our offices, but again we've never really left our office as we carry our office (phone, laptop, notebook) with us everywhere we go. Virtual meetings have made it easy not to have an official office anymore. I had to call the IRS that claimed I didn't submit a tax form, but they had a credit on my account. When I called, the person (who was working from home) couldn't answer my question of what they did with the tax form as the check they deposited was **STAPLED TO THE FORM!** I can only guess that when they took my form home to work on it that they took the check alright, but the dog must of ate the form. Anyway, I have to stop for now, I have a TEAM meeting to attend.

Michelle: Hey! I'll meet you there! Honestly, I see virtual meetings as a necessary evil. On one hand, I can attend several meetings in different parts of the country in one day, and we're able to keep the wheels of progress slowly turning. On the other hand, I'm pretty sure most of us are sitting at the kitchen table with bunny slippers on, debating if we have enough time to raid the fridge before we have to talk. Hence, why the camera and mic are off. Then there's the ever-present attendee who has a parrot who won't turn off their mic, an attendee who can't get off mute, and someone who has a back feed issue. As a trainer, I really find virtual options effective for disseminating large amounts of high-level information, but a complete train-wreck for teaching foundational subjects, especially to new operators. Like you said, with screens and cameras off, I feel like I'm talking in a vacuum, with no nods, grumbles, or blank stares to tell me I need to do a better job at explaining something.

I think the best form of communication is face-to-face. Hence why it is so important to have an actual office, where customers know they can come, ask questions, and get the best information. Face to face communication is definitely the oldest form of communication out there, but it allows us to catch all of the nuances of body language, tone, etc that all other forms mask on some level. It's also easier for many people to ask questions in an in-person environment. Regardless of the method, we need to use whatever means necessary to let our customers know that they have "Quality on Tap!"

Ross: I really enjoy our discussions as they remind me that although I'm comfortable being "Old School" that because someone doesn't do things my way doesn't mean it's wrong, it's just different and that's OK.

Oh, and by the way, my Old School flip phone doesn't have "Speech to Text" so I don't have to cuss the stupid phone out for wrong spelling! Heck, my phone doesn't even have a camera. I wonder what our next conversation will be about.

System Development Fees and Surcharges, Part 1

Carl Brown, President
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Author's Note: Those who calculate and set rates (management staff, boards and councils) are the target audience for this article, and one to follow in the next edition. If you are not a rate setter or calculator, I hope you will pass this article series along to those who are.

Why assess system development fees? Because it costs money to build capacity to serve new customers. You obligate capacity every time you connect a new user. Eventually, you run out of capacity to obligate. If you don't assess capacity costs to new connections, the cost gets passed on to existing customers in some other rate or fee. That is not fair.

To speed up the writing, I will not use the third-person tense, such as, "according to 'the author...'" Instead, I will just say, "I say..."

Why assess capacity surcharges? Same reasons, but, doing it with surcharges lets customers pay over time.

This article examines system development fees and minimum charge surcharges, later just called, "SDFs" and "surcharges." In particular, it describes meter size-based SDFs and surcharges.

Water and sewer service are the utility types discussed in this article. Why? They are just about everywhere there is a concentration of people.

But, SDFs and minimum charge surcharges should be applied, with some tweaking, to electric, trash collection and other services too. Brevity demands limiting the media covered here, but the principles are the same for other services

Granted, you really don't want to deal with setting (raising) rates at all. But, in the utility business, rates happen. If you must set rates anyway, why not set adequate and fairly structured rates?

Should your utility assess SDFs and surcharges? Yes, if:

- If it is growing very fast, or
- It has at least three different meter sizes, or
- It has any four-inch or larger meters, or it might be asked to serve such meters, or
- It serves very many dedicated irrigation meters.

Definitions:

Cost-of-service or cost-to-serve rates - rates that recover costs from new customers and existing customers in proportion to the costs that each one causes.

System Development Costs – those incurred to build capacity-to-serve.

- System Development Fees (SDFs) recover those costs proportionately and "up front" at the time a new connection is made.
- System Development Surcharges (surcharges) recover those costs proportionately, over time, as an addition to each customer's minimum charge.

Rates should match the customer base. If that base is simple, rates should be simple. As communities grow and diversify – become more complex – their rates should match that complexity. Usually, such rates should include meter size-based SDFs and surcharges.

How a community sets SDFs sends a message. "We believe everyone should pay their fair-share." Or, "Cheap fees! Cheap fees! Please build here." Or, "We want to keep out the riff-raff."

There are surcharges to pay for things like high-strength wastewater. Cost-to-serve principles apply there, too. But, those surcharges are not calculated like capacity SDFs and surcharges.

The above statements are simplistic and crass, but you get it. Where and how you set SDFs, and all other rates, sends messages. Be sure that the message people receive is the message you want them to receive.

Like many, I am a proponent of cost-of-service rates. You might not adopt cost-to-serve rates. But, you should determine what such rates would be in your situation. That way, you will know what you are gaining and losing when you adopt different rates.

To that end, if you want to learn how to do cost-of-service rate "studies," your starting place needs to be a visit to the American Water Works Association store: <https://www.awwa.org/store>, to order the manual, "M1 Principles of Water Rates, Fees and Charges." Spoiler alert: many hours and tough reading ahead, but if you want to be a rate analyst, you've got to put in the work.

Ah, you say you don't want to be a utility rate analyst? But, you still want to get that job done right, at a reasonable fee? Then, visit <https://gettinggreatrates.com/freebies/rag.pdf> to download the free "Rate Analyst Guide." The guide will help you solicit and select the right analyst and manage them successfully. There are lots of ways to do this wrong. You want to get it right.

I beat the cost-of-service drum loudly. But, I think each system should have appropriately simple or complex rates. Sometimes, simple trumps mathematically fair. Your rate analyst can gather data, do the math and advise you, but the simple versus fair decision is yours, not theirs.

But, wait! Your first action should be contacting Kathy Weinsaft of the Association. If your situation is simple, she can advise you and even help you with some math – no big rate analysis needed.

If your situation is more complex, know that the Association initiated the Wyoming RATES Program to do the difficult math. Disclosure: I am the analyst for the Program, so I would do that math. To learn more, visit <https://gettinggreatrates.com/consulting/WyRATES.pdf>. There are a couple of nice features of the RATES Program: Member systems get a 25 percent discount off my regular fees, and, the Association monitors my work, fees, etc. to assure that its members are being charged, served and treated right.

An aside:

Comparing your user charge rates to neighboring utilities is risky business. Their rates are probably unsustainable, unfair or both. You shouldn't match that.

Rule 1: Don't compare user charge rates.

Exception: If your rates are the lowest or most unfair of the bunch, comparison is your friend.

Exception to the exception: Many folks are proud of having the cheapest rates around, even if that results in bad or risky service. They might dig in even more when they find out they have won the race to the bottom.

My advice: Apply Rule 1. Figure out what it really costs, be strong, charge what it costs. For what customers get, those rates will be pretty cheap, too, and the utility will be funded right.

Rule 2: Do compare SDFs. Isn't rate setting fun?

Back to the cousins: SDFs and surcharges; these are two parts of a comprehensive rates program. SDFs recover capacity costs "up front." Their forte is recovering peak flow capacity costs. Why recover peak costs up front?

If a big water-using plant wants to move to town and will need an eight-inch meter, and that will require you to upsize a lot of infrastructure, it is best to get as much of that extra cost up front as you can. Oh, you could plan on recovering all those costs over time with surcharges. But, if the plant goes belly up after five years, everyone else will be left holding the capacity cost bag.

But, there is a natural limit to how high SDFs can go – competition. If you price new connections too high, development – with its jobs, higher utility sales and so on – goes down the road where it is cheaper to build. You must find a happy medium on SDFs. Decisions, decisions.

Surcharges, on the other hand, recover capacity costs on the "easy payment plan" from current ratepayers. Thus, you should get what you can up front with SDFs. Get the rest, or a lot of it, over time with surcharges. You can recover peak flow and base flow capacity costs with SDFs and surcharges.

All developers want a deal. Be wary of the "Let us in cheap and you will be richly rewarded" sales pitch. Sometimes, cutting connection fees to lure development doesn't pan out.

There, I said it. Capacity costs come in two flavors: peak and base flow.

Fees to recover peak flow costs should be based on meter size.

Base flow costs are the same for all customers, big or small. Thus, the base flow fee should be the same for all customers. If you are doing, or getting, a cost-to-serve rate analysis, just classify base flow costs as "fixed" and they will flow through to the base minimum charge – easy and fair. That means, for all practical purposes, you only need to recover peak flow capacity costs from SDFs and surcharges.

I have alluded to meter size-based rates several times, but why?

Meter size-based rates are clear cut. Other methods can be quite subjective. In rate setting, you want things to be clear cut every chance you get. You want to say to a disgruntled ratepayer, "The math says this is fair so we're going with fair." Once you stake the high ground, which is mathematically supported, they are forced to argue for the low ground. Have that discussion openly, in front of everyone, and your other ratepayers are going to argue for the high ground rates, too. Plus, they will appreciate your being fair and open with them. Solve two problems at once.

The following generalities should give you an idea of when SDFs and surcharges are appropriate:

If your community has stopped growing, "May-day! May-day!"

- If it is growing very slowly, just one "May-day!" With few new connections to assess fees to, SDFs become a moot point. They will generate little revenue. (The huge point is, the sustainability of your system is hanging in the balance. You have bigger fish to fry than SDFs.) In these

cases, forget SDFs. By vote of the board or council, set new connection fees low and pretty flat. Maybe even eliminate them. But...

- Recover at least some system development costs through meter size-based surcharges. That way, you won't discourage growth, but you will recover at least some system development costs fairly over the long run.

- As communities mature, their infrastructure needs transition from mostly building new "stuff" to mostly replacing or upgrading existing stuff. SDFs match up well with costs for building new stuff, so use those costs as the basis for SDFs. Only new connections pay SDFs. Surcharges, however, are on-going and existing customers pay those, so those fees match up well with replacing existing stuff.

Those are some of the important SDF and surcharge concepts and realities. SDFs and surcharges should be a part of many utilities' rates, so consider them. Adopt them if they will help.

Next time we will tour the math of SDFs and surcharges. Math can be hard, but several tables in that article should help you to more easily grasp how it is done.

Carl Brown is President of GettingGreatRates.com, which specializes in rate analysis for water, sewer and other utilities. The firm serves as the RATES Program rate analyst for the Colorado, Kansas, New Mexico, North Dakota, Virginia and Wyoming rural water associations. Contact: (573) 619-3411; Carl1@gettinggreatrates.com

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The Meter is Running for Rural Water Systems

How Rural Providers can Tackle LCRR Compliance

There has been discussion around potential updates to the Lead and Copper Rule (LCR) for years. While the revised LCR (LCRR) was passed in December 2020, delays in its implementation have led many water systems to postpone preparations for it.

They do so at their own peril: it is just a matter of time before the LCRR is enforced. In fact, the current deadline for action is December 16.

The LCRR is sweeping in its impact on water systems, and none will feel it more acutely than rural systems.

The Association of State Drinking Water Administrators (ASDWA) estimates that the revisions could create up to five million additional hours of workload for systems over the next five years, and cost upwards of \$47 billion to enact.

While funding is available in the \$1.2 trillion Infrastructure Investment and Jobs Act that became law in November, smaller water systems will still struggle to comply. That's because small, rural, and disadvantaged communities often lack the resources needed to meet safe drinking water standards. Their staff members wear many hats, are spread thin, and may not have the technical expertise needed to comply with this complicated rule.

What rural water systems need to know

With LCRR deadlines scheduled for 2024, the three years leading up to that date are critical to preparing for compliance.

A recent study by 120Water shows that the majority of water systems—regardless of size—are not ready for the new rule. More than half of water systems surveyed said they have no data on lead service lines (LSL) in their systems, and just 10% said that their LSL replacement plan would allow them to comply with the rule.

With a short horizon, it's important that rural systems understand what the new rule entails so they can begin taking action. The key aspects of the rule include:

LSL inventory and replacement. Utilities will be required to conduct a "location-based" inventory of publicly owned and privately-owned LSL materials, including all systems and connections. The inventory must be submitted to the

EPA within three years. Water systems with more than 50,000 customers must make the inventory public, and this is a good practice for smaller systems, as well. Results also must be resubmitted alongside annual or triennial monitoring results. Once the inventory is complete, systems must develop an LSL replacement plan if lead service lines are found or if galvanized pipes that previously were connected to a lead pipe are found.

Tier site monitoring. Some utilities did a lot of work for tier monitoring requirements for community water systems. With the new rule, tier monitoring sites must specifically be based on the LSL inventory results.

The LCRR changes the definitions of the tiers and creates two additional tiers:

- Tier 1 includes single-family homes served by LSLs.
- Tier 2 includes multifamily residences with LSLs.
- Tier 3 includes single-family homes with galvanized service lines downstream from an LSL, which must be replaced.
- Tier 4 includes single-family homes with copper pipes and lead solder installed before the 1986 ban.
- Tier 5 includes locations where plumbing is similar to other sites served.

Any Tier 1 locations will require water sampling. The new rule requires a first-and-fifth liter draw and testing as a best practice to truly understand water quality in the system. The idea is that the first liter will identify if copper is present in the resident's plumbing system, and the fifth liter draw will identify if lead is present.

Rural operators must be prepared for the results of this testing. After Michigan began sampling the first and fifth liter, the number of water utilities above the EPA's action level for lead doubled in a year.

Regulatory thresholds. The "Action Level" of 15 ppb remains the same, but the new rule adds a "Trigger Level" of 10 ppb that serves as a new trigger for Corrosion Control Treatment (CCT) and other actions designed to get to the root of known or suspected issues. In addition, if the 90th percentile of samples exceeds 15 ppb, new rules for regulatory review, increased monitoring, CCT deployment, public notification and education, and LSL replacement kick in.

Find and fix. Utilities will be required to resample for both lead and water quality at any home with lead levels above 15 ppb within five days of receiving the result and must attempt to determine what caused the elevated lead level. This will require resources to visit the home and do further testing.

School and childcare sampling. Under a completely new rule, utilities will be required to sample 20% of all elementary schools and 20% of all childcare facilities built before

2014 in the service area each year. In addition, any non-elementary school can request sampling and the utility is required to perform it. Utilities will be required to communicate the results to stakeholders, which raises the risk of damaging news stories, and must be managed properly.

Communications and reporting. The LCRR enhances communications standards. Customers with a lead sample result greater than 15 ppb must be notified within three days, compared to the previous 30-day requirement. If the 90th percentile levels are greater than 15 ppb, all customers in the service area must be notified within 24 hours. Overall, communications will be a necessary component of compliance.

In addition, water systems will be required to report LSLIs, updated tier sites, monitoring results, school and daycare testing results, public notification templates, and water quality parameter results to their state agency.

A carve-out for small systems

Fortunately, the LCRR gives a choice to small systems serving fewer than 10,000 people on how they respond to the presence of lead in drinking water:

- Utilities can install corrosion control treatments.
- Utilities can opt to replace all LSLs within 15 years.
- Utilities can install and maintain point-of-use water filters.
- Utilities can replace all lead-bearing plumbing materials.

Again, in order to make the right choice—or any choice—water systems will first need an LSL inventory to understand what is causing the high lead levels in drinking water.

The first step: a lead service line inventory

Public water systems must develop a preliminary inventory of both public and private side service lines within three years of the final rule publication and use this preliminary inventory to create a replacement plan for known or possible LSLs. Therefore, the best way for water systems to prepare for LCRR is to start an LSL inventory today.

Getting a jump on creating an LSLI has other benefits for rural operators, as well. Chief among this is access to funding, as most grants and funding mechanisms will require systems to know what they need to remediate in order to apply. After all, utilities cannot replace LSLs until they know where they exist.

It also will help rural operators be ready to meet LCRR deadlines once the rule is enforced.

By definition, an LSL is a portion of pipe that is made of lead, which connects the water main to the building inlet and may be owned by the water system, owned by the property owner, or both.

To create a proper inventory, utilities should include lead and non-lead pipes, galvanized pipes, and pipes of unknown materials, as well as goosenecks/pigtails, copper and lead solder, and other non-lead components. While the revisions only mandate four categories today, it is a best practice to document all pipe and connection materials in an effort to “future proof” the inventory.

Start by conducting an internal records review of tap cards or in work order systems to determine if your utility has recorded information about the types of materials used for service lines. If the type of material isn’t recorded, look for clues such as the year the service lines were installed (lead lines were banned in the 1970s), and the size of the service line (lead pipes are almost always two inches or less in diameter).

With this framework in place, start filling in the gaps. Some strategies to do this include:

- Record sampling information to determine if lead is present in the water, using the first-and-fifth liter practice.
- Make it a practice for employees to look for inventory information during service calls, water meter updates, etc.
- Enlist the help of homeowners to provide visuals of plumbing materials.
- Use statistical modeling and predictive analytics to help determine the most likely areas for the location of lead pipes.
- Track this data using a cloud-based platform built for water utilities that will house the data and create workflows to meet compliance rules.

Once an LSLI is created, utilities will have the information needed to identify tier sites and conduct cost/benefit analyses of compliance alternatives.

The time has come to take action on the pending LCRR. As the great Vince Lombardi said, “If you’re five minutes early, you’re already 10 minutes late.” It’s time to get in the game.

About the author:

Lowell Huffman is director of business development at 120Water, the nation’s leading solutions provider for managing lead programs.

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Our Western Heritage

by Kathy Weinsaft

Spring Road Trip

As I am sitting at my desk watching it steadily snow, it is currently -7 degrees and it feels like -22 degrees. What is a girl to do? Dream of spring of course. It may be hard to believe but I see a road trip in my future and you are invited to come along.

We spent the last couple of Connection articles in the beautiful northeast of the state, so it is only fair that we should explore the equally amazing southwest part of Wyoming. Let's start in Evanston. This vibrant little city has a lot of spirit and recreational opportunities. It has an elevation of nearly 6,800 feet, so don't overdo if you are a flatlander.

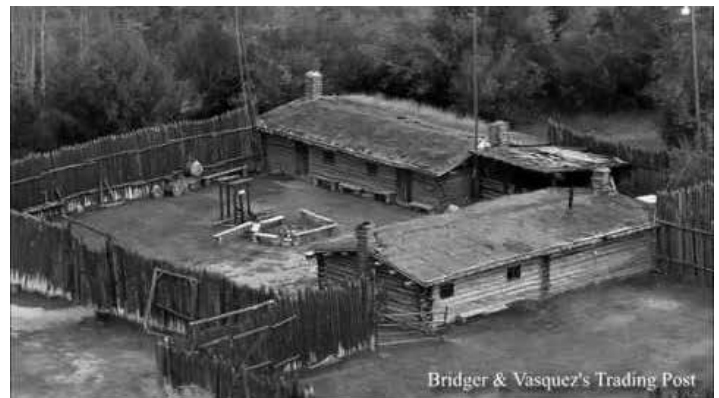
Evanston was founded during the first Transcontinental Railroad project. The Union Pacific Railroad Complex, locally referred to as the old roundhouse is just astounding. The renovations that the town has done are just breathtaking. The architecture has to be seen and it is definitely worth a visit. If you are hungry after your tour of the Roundhouse, you might want to stop one block over on Main Street and check out Suds Bros, Kates, Main Street Deli, or the Pie Hole. It is always important to check out the local cuisine when one is road-tripping.

After lunch, it is off to Bear River State Park. Bear River State Park is a day use only park comprised of 324 acres. It is really beautiful. It is located at the eastern end of the Bear River Greenway, a trail system developed by the city that connects the park with downtown Evanston. Take the walk! The park offers picnicking and a visitors center. They even have their own herd of bison and elk, so wildlife is definitely on the agenda. There is even an arched footbridge that crosses the river.

From the Park, let's get in the car and head to Historic Fort Bridger. It is a short drive east on I-80. I hate to admit this, but I had seen the signs for Fort Bridger for years before I stopped. It is a treasure. Plan on spending the rest of the day at the Fort. There is a ton to see and do. The site includes 37 acres with 27 historic structures, 4 historic replica structures and 6 modern structures. The Fort maintains and interprets the historic structures and remnants from its 5 eras of occupation which include the Mountain Men, Mormons, Military, Milkbar/Motel and Museum. The site also interprets the many trails that come through Fort Bridger including the Oregon Trail, California Trail, Mormon Pioneer Trail, Pony Express Trail, Overland Trail, Cherokee Trail and the Lincoln Highway. Some natural sights you will see at Fort Bridger include the Groshon Creek, aspen groves and many historic pines from the military era.

Let's get back on I-80 and head toward exit 99. From this exit you can catch the road south to Flaming Gorge National Recreation Area. Made of spectacular red canyon walls and arid green forest it sprawls across 207,363 acres of scenic landscape and wilderness. The reservoir is the star of the show though. It measures 91 miles long and spans the states of Wyoming and Utah. The reservoir is separated from the Green River by the towering wall of the Dam, which you can tour. The Dam stands 502 feet tall and was completed in 1964. The surface area of the reservoir is over 65 sq miles, with varying depths, and is 430 feet deep in its deepest spot. The reservoir can provide a plethora of water activities from fishing to boating to tubing and wakeboarding. Let your imagination guide you. You will have no problem finding a place to stay when you are tuckered out from playing. There are 43 campgrounds hosting over 700 individual campsites and 27 group sites, plus countless mountain retreats if camping isn't your thing.

Once you are rested, we are going to break good road etiquette and backtrack west just a bit to Kemmerer and Fossil Butte National Monument to hike around what's pretty much the largest deposit of marine fossils in the world. It is known as "America's Aquarium in Stone." It sits in what was once a subtropical habitat. 50 million years ago this was a large lake. It was home to alligators, turtles, fish and even palm trees. Over the eons, animal and plant remains sank to the bottom of the lake bed, where they were covered with sediment and fossilized. When the lake dried up and the bed was eventually pushed to the surface, some of the best preserved fossils in the world were revealed. The visitor center is not to be missed. It displays more than 80 fossils, including two types of bats, numerous species of fish and even a 13 foot crocodile. There is even an area where you can handle the fossils and make rubbings of them. I have seen kids of all ages enthralled by the experience. That would include me. So don't let this good weather go to waste. Get out there and road trip.



It is, after all, part of our western heritage



Scrawny Girl and the Battle of the Sweet Potato

by Michelle Christopher

As someone who considers herself a relatively healthy eater, I pride myself on enjoying all vegetables. Strike that. Most vegetables. Vegetables in my mind are a savory food, and anything sweet is suspect. Therefore, I gag at the thought of eating winter squash, pumpkin, and sweet potatoes. I know these vegetables are loaded with all sorts of vitamins and nutrients and propel athletes to spectacular performances. I think they're gross. Honestly, I feel guilty calling myself a whole foods runner, and then admitting that I think these vegetables are the demise of polite society.

Over the years, I've tried to incorporate sweet potatoes into our diet with little success. John and I have agreed that there is simply not enough butter, salt, garlic, herbs, or hot sauce in the universe to make these edible on their own. Don't even get me started on brown sugar or marshmallows. It ain't happening. But... I'm entering another training cycle, and all I see from whole foods ultra-runners is how magical sweet potatoes are. So, I gave myself a challenge: figure out a way to eat sweet potatoes that doesn't involve lecturing myself like a three-year-old. "Michelle, you are forty-two. You must eat forty-two bites of sweet potato." Full disclosure, those bites were only visible with a lab microscope. Fortunately for me, someone invented the internet, and I've been skulking the recesses attempting to find recipes that will aid me in my quest to conquer the sweet potato.

After far too many hours of Google and ~~several~~ many dog videos later, I came up with three recipes to try. First off, Shalane Flanagan's Rise and Run Sweet Potato Sage Biscuits. I was totally fan girling about this recipe. Shalane Flanagan is one of the most consistent marathon runners in American history. Obviously, this recipe was going to be a personal best. Except it wasn't. The combination of butter, parmesan, sweet potato, and sage created a flavor not unlike vomit. (Sorry Shalane.) I attempted to feed these to John after drowning them in sausage and bacon cheddar gravy. His opinion? Why did you ruin good gravy with these biscuits? Ok round two. Pinterest offered a sweet potato waffle.

I adore waffles in all forms, so this seemed like a good option. It was also based in the sweet realm, with plenty of cinnamon, so no savory/sweet weirdness to contend with. This recipe was definitely a whole foodie concoction, with oat flour, sweet potato, banana, and almond milk. I doubled the cinnamon amount and added a few more spices to ensure success. What the recipe failed to mention is that sweet potatoes take an abnormally long time to cook. So, with my circa high school graduation waffle maker, I ended up with a waffle that was nearly burned to a crisp on the outside, with an uncooked goo on the inside. Even after covering these with an amount of butter, I'm slightly embarrassed out and an avalanche of cinnamon sugar, the result was slightly south of awesome.

At Shel – 0, Sweet Potato – 2, things were getting tense. Would it be possible to slay the sweet potato? I was unable to find a third recipe that passed the initial "won't make me gag" reading, so I invented one of my own. First, I had to come to terms with why I despise sweet potatoes. I came up with two reasons: flavor and texture. One of the huge detractors of the biscuits (beyond the vomit flavor) was that I didn't mash the sweet potatoes adequately, and there was a stringy chunky texture to the biscuits that only enhanced the vomit-like experience of them. A smoothie seemed like a good idea, both conquering the texture issue, and allowing me to add all sorts of flavors that I do like.

When choosing the additional ingredients for the smoothie, I came to a conclusion. Most sweet potato recipes either glorify the sweetness through excessive amounts of brown sugar or try to pretend it doesn't exist by adding herbs or cheese. What if I merely used the sweetness of the sweet potato as a natural sugar? My preference is and always will be tart things, so I decided to use cranberries to work with the sweet potato.

Because it's currently Building Training Block 1, and I'm needing all things protein to rebuild and repair the muscles that I'm trying to destroy on a regular basis, I added a French vanilla plant-based protein powder. (Vanilla tends to have a smoothing quality, which is nice because cranberries can be a bit sharp.) Then I worried that the whole thing would be too sweet, so I squeezed in a lemon and added the zest. I added almond milk as the liquid to bring the smoothie together. Know what? It was good. The flavor was fresh, pleasantly tart, and not a hint of sweet potato. I did use frozen sweet potato and cranberries, and as I finished the smoothie, it did begin to smell slightly of sweet potato. So, if you're anti all thing's sweet potato, I'd recommend drinking this immediately after making.

*Incidentally, this problem-solving process works just as well in water and wastewater land as it does in figuring out how to eat food you hate. Break the issue down to the smallest detail. Figure out which detail is not working and begin a plan to repair/replace/solve the issue. Trying to

mask the details or pretend they doesn't exist only makes the issue worse.

Cranberry-Sweet Potato Smoothie

Approximately 1 c cooked sweet potato, frozen and chopped in chunks

*To bake a sweet potato, prick holes in the skin and place on baking sheet. Bake at 425 for about an hour. Let cool, peel skin and chop in chunks for freezing

1 c frozen cranberries

1.3 oz vanilla protein powder – this is the amount in my single serve packets. So about 2 TBSP.

1 c almond milk

1 TBSP lemon juice (or the juice of a small lemon and zest)

Blend until smooth and drink immediately.

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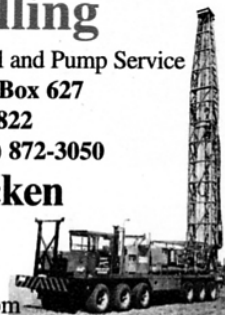
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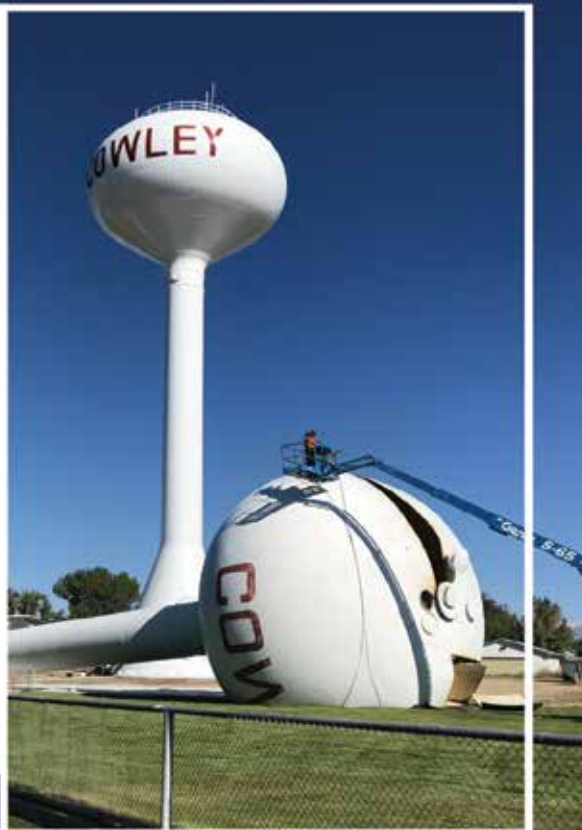
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