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2020 SPRING–SUMMER EDITION



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FRIENDS HELPING FRIENDS!

Front Page...2020 Vision

The past months have shown us we all need to Visions for the future. MRWS is here to help all water and wastewater utilities develop and implement those visions.

Cover photo: MT Hwy 200 , central Montana. Photo taken by Julie Allen

National Director's Report Allen Kelm



What crazy times we are experiencing with the current COVID-19 Pandemic. As your Montana Director of the National Rural Water Association (NRWA), I am working closely with Montana Rural Water Systems and sharing information coming out of NRWA, and sending MRWS information back to NRWA that will go to Washington D.C. to help our congressional delegation understand how the COVID-19 is affecting small systems around our nation and try to get some sort of economic relief.

Researchers are finding that the COVID-19 virus can be detected in the wastewater water treatment plants. By monitoring the wastewater, it can give you an indication of the severity of infection in your community. This may be valuable information for the medical community to let them know how much virus is in the community that is not detected by other methods. More on this as information is released.

We are also being kept informed as to the covid-19 infection of water professionals and the impact on the treatment facilities and the communities that they serve. To date there have been 3 water/wastewater systems in different states that have been affected. Their State Rural Water organizations are helping to keep their communities in safe water and wastewater.

It is vitality important that water/wastewater professionals keep themselves and their co-workers healthy and safe. As water/wastewater professionals we have a responsibility to provide safe potable water to our communities and safe discharge from our wastewater treatment facilities also.

A couple of things that we are hearing about the COVID-19 is "Wash your Hands, Wash your Hands, Wash your Hands and Stay Hydrated." Without safe potable water it makes these basic tasks much more difficult, not only for us and our families, but also for emergency responders, food industry workers, other essential workers and our medical professionals to do their job and to keep our communities going. As we get caught up in the everyday job of providing safe water/wastewater service to our communities, that we forget that this service is the foundation of our communities.

A few things to think about during this pandemic include making sure you have a back-up or relief operator to take over in case the main operator gets ill or quarantined. If you don't have one, talk with your Mayor, board, council and ask them what they would do if suddenly you couldn't come to work. Who would supply the community with safe water and wastewater? Have an alternating staff so employees don't all work together in case one or more of the staff were to contract the pandemic virus.

About this Newsletter

Montana H2O-NEWS-4-You is the official publication of Montana Rural Water Systems, Inc. It is published 2 times per year for distribution to representatives of rural and municipal water and wastewater systems. Articles, news items, and photographs are welcome. Submit to MRWS at 525 Central Ave M6, Great Falls, MT 59401. Statements of fact or opinion are the responsibility of the author and do not necessarily reflect the opinion of Montana Rural Water Systems, Inc. All rights reserved. This is a non-profit bulk mailing permit at Great Falls, MT.

Compilation, Editing, & Layout completed by Julie Allen & Staff.

If a staff member exposes their fellow employees there is a quarantine procedure that needs to be followed. Where does that leave you for employees? Split up your water quality staff to avoid this type of problem and keep the community's lifesaving water supply flowing. Provide your employees with the proper safety and disinfectant supplies to continue to safely do their jobs.

Do not put your water quality professionals in a compromising situation by asking them to volunteer to take on tasks that could increase their potential to contract the virus. Things such as volunteering at a food distribution center, hospital, serving as an EMT or ambulance attendant, etc. where there is a greater exposure and potential to contract the virus. Keep your water quality professionals safe so they may continue to do their job.

Remember, you are a licensed water quality professional with an abundance of knowledge about the rules/regulations of the water/wastewater industry and how to operate your facilities. Every facility is unique to each community and you can't just get on the phone and get a volunteer to come in and do your job to provide safe water to your community. You may find a certified operator from another community, or someone out of retirement that is still certified as a water professional, but they will still need some instruction, as there are no two systems that operate the same. Now is the time to ensure that you have a back-up operator for your community.

In closing, I hope this newsletter finds everyone and their families safe and remember the Rural Water Moto "QUALITY ON TAP – OUR COMMITMENT OUR PROFESSION" Let's keep our water quality professionals safe so they can provide quality water to our communities.

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From Julie Allen's Desk

MRWS Training Specialist

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jallen@mrws.org

So, you're going to take a certification exam. Are you ready?

Tips for making it through it all!!

Before the big day:

- * **Crack the books!** One of the biggest myths out there is that a person can walk into a three-day certification review without ever looking at study materials and pass the exam at the end of those three days. It doesn't matter which exam you're taking, studying prior to any review course is a must!
- * **Get the right study material!** Read the information you get in the packet from DEQ. The needs-to-know (NTK) list has a list of appropriate study material on the last page. If you're wondering if you need to invest in the books, give me a call, I'll walk you through that decision. DEQ says you must apply at least 30 days prior to taking the exam. If you have no background in water or wastewater system operation, I suggest you start studying 3-6 months prior to taking the exam, depending on which exam you're taking.
- * **Study every day!** It doesn't have to be hours and hours every day. Even a 10-minute review of something helps implant that knowledge a little bit more in your brain. If you're learning new concepts, that 10 minutes of review can be vital! Make copies of your NTK list and leave them in places you frequent often—your work truck, personal vehicle, your favorite chair at home, your desk at the office, the bathroom even! Places where you can pick it up, glance over it, and realize you know nothing about sludge or lab analysis or trench safety. Something you look up because you want to know about it will be retained longer.
- * **Cut out the distractions!** When you're going to get down and dirty and plan to spend an hour or longer studying, turn everything off! Don't study in front of the TV or computer. If you can, turn your phone off, or at least put it on silence.
- * **Find lots of practice exams!** Even if they ask many of the same question, practice makes perfect, even in this instance! Plus, they give you a good idea of the areas you need to focus on. There are lots of them out there and I can provide you with a couple, too!
- * **Study with others when you can!** Go to review sessions. Toss around questions at the shop. Bounce questions off our Circuit Riders. You'll be surprised how much you retain when you must explain an answer to someone!
- * **Lastly, know what you're walking into!** Having an idea of what the exam is like helps your nerves. Talk to others who have taken the exam. Learn how to take multiple choice exams. Understand and be familiar with your calculator and the formula sheet.

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The good, the bad and the *Coronavirus*

The Front-line Role of Water and Wastewater Facilities

Kristi Kline, SWP Specialist

We live in a microbial world that includes many species that range from large multi-celled (and complicated) organisms (like humans) to small one-celled microorganisms (bacteria) and even smaller submicroscopic viruses. In this microbial world there are microorganisms that are considered **good**, **bad**, and even **ugly**. Currently, the world is dealing with the one that fits the “ugly” label, the CoVid-19 Coronavirus.

The “Good”

In the water environmental world, municipal wastewater treatment systems incorporate mixed populations of microorganisms (“the **good** ones”) in a controlled environment allowing chemical and biological processes to occur to achieve the main goal of improving water quality. Aerobic, anaerobic and facultative organisms are utilized in biological systems such as lagoons, oxidation ponds, activated sludge, fixed film and tertiary treatment and further in biosolids digestion processes. These beneficial organisms are an intricate part of completing complex reactions that result in reducing organic and chemical loading, lowering ammonia levels and removing nitrogen and phosphorus just to list a few, which all lead to an improved water quality. In all these systems, *Treatment Operators* play an important on-going role to manage the system operations (i.e. flow, dissolved oxygen, O&M) to enable the beneficial organisms to function “behind the scenes”. As water is essential to human life, the success of these treatment processes is crucial to the future of life.

The “Bad”

Pathogenic organisms are defined as those that cause disease. Pathogenic organisms could be a type of bacteria, virus, fungi or parasite. The objective goal of the water and wastewater treatment **disinfection process** is to remove pathogenic organisms and provides the final protective barrier against diseases.

Disinfection treatment using *chemicals* (i.e. chlorine) works by damaging a microorganism’s cell membrane and/or wall allowing the chemical to enter and interfere with the cell’s respiration and DNA activity, thereby killing the microorganism. Contact time with the chemical is an important operational function to ensure a successful disinfection has occurred.

Another disinfection treatment used is *ultra-violet (UV) light* that functions by lysing a cell and destroying or disrupting the nucleic acids (DNA and/or RNA) which either kills or inactivates the microorganism. UV light intensity is an important design criterion. UV light is effective to destroy *Cryptosporidium* and *Giardia* microorganisms that are resistant to chemical disinfection methods.

Disinfection treatment process are designed to achieve these objectives:

- (2-log) 99% removal of *Cryptosporidium*
- (3-log) 99.9% removal and/or inactivation of *Giardia lamblia* cyst
- (4-log) 99.99% removal and/or inactivation of viruses

And the “Ugly”

CoVid-19 is a novel (new) pathogenic virus that has entered our world and is presenting extreme challenges and daunting situations for all of us. It is a type of “Coronavirus” named for the spiky projections on their surface. This virus consists of RNA-nucleic acid that is surrounded within a lipid (fatty acid) protein coat. As with all viruses, it can only replicate inside the living cells of an organism (host). As extensive research and studies to combat the disease in humans is rapidly being conducted, it is important to understand the valuable resource that water and wastewater treatment facilities provide as a protective barrier against this pathogen within the water environment.

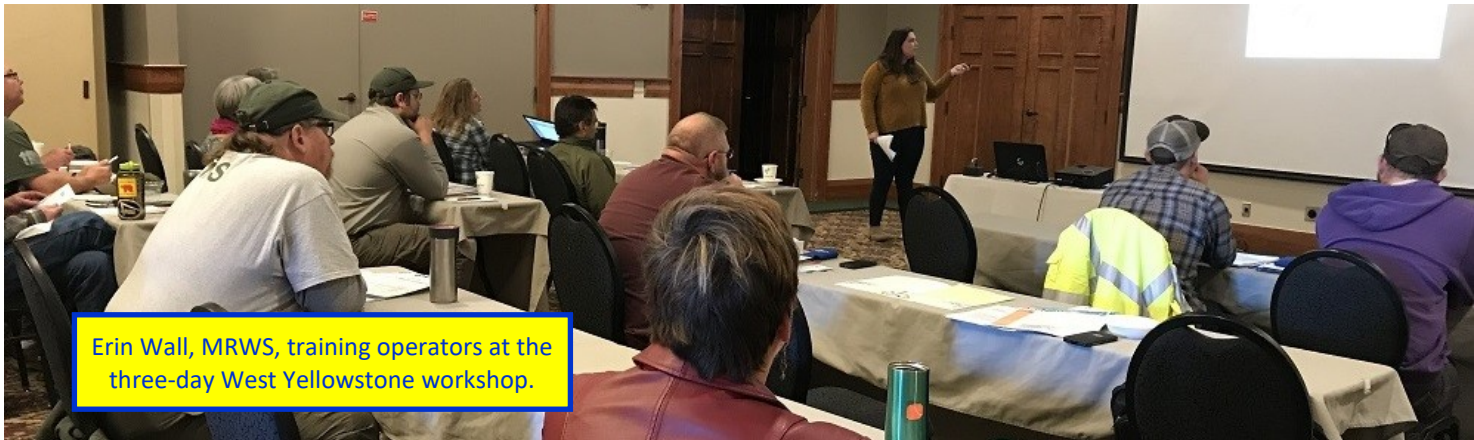
“The Front-line Role of the Water and Wastewater Systems and Staff”

The disinfection processes within Water and Wastewater treatment systems have been designed to protect against pathogenic organisms. The components that make up the CoVid-19 virus (**RNA and the lipid protein**

coat) are key points of attack. Chlorine-based chemicals and UV light radiation (commonly used in most disinfection systems) are effective to destroy or inactivate DNA and RNA within organisms.

Emulsifying agents like detergents and/or soaps are effective to dissolve lipids (fatty acids). Hand washing with soap will help to reduce germs and chemicals and is the number one protective action everyone can do. A reliable water supply is needed in order to wash your hands to achieve this protection. Thus, operating and maintaining the disinfection process and continuing to provide a safe, potable water supply every day is a vital protective role for every treatment operator and their facility.

The importance of the treatment design by engineers, daily process operation and maintenance by public utility staff and support to maintain these facilities by community members are all essential front-line barriers of protection and crucial in this challenging fight.



Erin Wall, MRWS, training operators at the three-day West Yellowstone workshop.



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FROM THE DESK OF JOHN W. CAMDEN, MRWS EXECUTIVE DIRECTOR

MRWS Coronavirus 2020 Update

First, I hope our Montana Rural Water Families are doing ok as we continue with the pandemic.

I would like to say I'm very proud of our Montana water/wastewater operators, sanitation workers, clerks/bookkeepers and the many others that have kept our utilities operating, communities safe and health care systems operating. There are other un-sung heroes such as truckers, retailers, fuel station attendants, etc.

Montana Governor Steve Bullock needs to be recognized for his leadership in the first 30 days of the pandemic. And, the Public Water Supply (PWS) Bureau for providing additional information concerning monitoring/sampling requirements, extension of the Continuing Education Credit biennium and allowing Montana Rural Water Systems to move their annual water conference to July (conference is still not confirmed). Those individuals include Tim Davis (Division Administrator) and Amy Steinmetz (PWS Bureau Chief) along with the PWS staff. Other partners include the Department of Natural Resources and Conservation, Department of Public Health and Human Services, Montana's Congressional Delegation, USDA and the National Rural Water Association (NRWA). Finally, I need to thank the MRWS staff for providing "Remote On-Site Technical Assistance" to our members, operator training with "Go To Meetings" and for Tanya (office manager) in keeping the office functional for the past 1 ½ months.

Where are utilities headed with the COVID-19? Not having a crystal ball, it is hard to say what direction. What I can say is that you as a utility need to stay visual, strong and educated on the COVID-19. If you don't have a back-up operator, start training your board members or council members on how the systems works. Continue working on your Emergency Response Plan. Stay in contact with your local DES coordinator. Develop a relationship with surrounding communities or water districts to provide local assistants. And stay in contact with the MRWS staff and confer with the PWS staff when needed. Be sure to review both the MRWS and the PWS websites as there is valuable information for your review. Another piece of good information is the Coronavirus/COVID-19 Readiness: Sustaining Operations summary. This information can be reviewed at the attached link: https://mrws.org/wp-content/uploads/COVID-19-Drinking-Water-Doc_DEQ.pdf

Finally, it is with a heavy heart that the first casualty of the COVID-19 in Montana was part of the Montana Rural Water Family. Jim Tomlin, who was a board member of the Angel Island Association Water System, where he lived the past 10 years passed away March 27, 2020. Thanks for being a part the Rural Water Family and God Bless!



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Communicating With The Public

By Roger Skogen, Wastewater Technician

With the current situation of Coronavirus, it might pay dividends to address your community. You may want to put out a newsletter, send out emails, post a notice at the Post office, on Facebook, or your website. There are many details that you need to pass on to the public during this trying time.

One of the first things you may want to address is what policies are in place for paying bills, getting permits, or contacting maintenance crews. With some communities, they have closed offices to the public creating a communication gap with the customers. You need to let the public know what protective measures you have in place to protect both the citizens of the community and the public employees that are relied upon to maintain the supply of water and keep the sewers flowing. Provide them with the information they need to contact you during this time. Proactive communication with the public may avoid problems in the future days.

The main issue that I want to discuss in relation to communication is what belongs in your wastewater. With the supply issues of bathroom tissue and cleaning and disinfecting products, the public are putting many things into the sewer systems that do not belong. They need to know that the only thing that is permissible in a sanitary sewer system is human waste and bathroom tissue. This does not include flushable wipes, feminine hygiene products, condoms, Kleenex, paper towel, kitty litter, or leftover and outdated pharmaceuticals. Flushable wipes say flushable, but they do not decompose, or break down like bathroom tissue. They plug up grinder pumps, screens, collection systems, and end up accumulating in sludge settled out in lagoon ponds. Cat litter may say flushable, (just flush the cat poop down the toilet), but any cat litter that is flushed becomes a heavy sediment that builds up in the bottom of service lines and collection mains. This will eventually lead to flow restrictions or plugged sewer lines. With health concerns at an extremely high level, the last thing that is needed is backed up sewers, creating a further health hazard.

I mentioned there are numerous methods to inform the public of current policies and stress the importance of the situation. One of the best is in the form of a newsletter or pamphlet. They are easily mailed to the public. I am seeing many systems that are providing information to the public via these mailable pamphlets and newsletters. Include in these newsletters the current contact information; including emergency phone numbers and call out procedures. Address the importance of what belongs in the wastewater system. Let them know how to handle any water problems, and that the water is safe to drink. Let them now you have a reliable water source with good clean drinking water. Inform them they may contact you with any questions of concern. Give them a timeline for the next newsletter, and possibly include more contact information that includes the County Health Department, Law Enforcement Agencies, local Hospitals, and any other emergency information you deem necessary.

With all this in mind, remember that communication is such a vital part of working with your utility customers. This communication will provide you with the opportunity to relay all necessary information to your customers.

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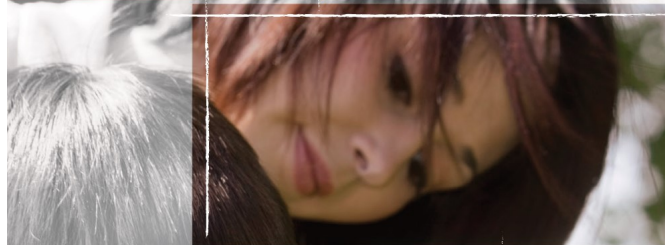
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Department of Natural Resources and Conservation Newsletter for Montana Rural Water Spring 2020

The Department of Natural Resources and Conservation (DNRC) is focusing on a new balancing act. Working with communities to get their projects completed and dealing with the public health issues of the Corona Virus (COVID-19).

The DNRC is committed to having staff available to help you. Staff members will be available by email and phone. Some staff are working at home. With schools being closed and considerations for family health, the 8 to 5 schedule is changing. However, we are working to balance health, family, and work.

Even with all of this, we will continue to work with communities to get projects funded and into construction.

Revolving Fund Loan Program

The DNRC has been engaged in getting projects ready for the 2020 construction season. There will be projects in both small and large communities all over Montana. Over \$50 million of projects will move forward with the contractor signed up to be in construction and another \$30 million of projects being bid. These are a few of the projects.

Belgrade	Wastewater treatment
Broadus	Lift Station
Great Falls	Storm sewer work
Shelby	Lagoon work
Denton	Water system improvements
Glendive	Water treatment plant
Sheridan	Wells and pipelines

The State Revolving Fund financial and engineering staff are working to get projects up and ready to bid.

We welcome our other funding partners to work with us to bring these projects to completion. Invite and tell your communities what is going on. Educate them and invite 3rd and 4th graders in to see the plants and how systems work. We thank all the community leaders for taking on these projects.



Broadus Lift Station Improvements March 2020

Renewable Resource Grant and Loan Program

This Spring has presented us with many challenges during the Novel Coronavirus outbreak and we wish all rural communities our best as they adjust to a more virtual life without much contact with those that support your life and work. The DNRC is working hard to meet the needs of your communities and move forward together.

The Department of Natural Resources and Conservation Renewable Resource Grant and Loan Program (RRGL) has been working on trainings, project grants, and reviewing and ranking planning grant applications. We are processing all business requirements and needs.

Continued on next page

RRGL project applications are accepted Until June 1, 2020. Applications can be completed at www.funding.mt.gov.

A list of the available grants and program information can be found on the DNRC webpage: <http://dnrc.mt.gov/divisions/cadd>.

Our partnership with **Water, Wastewater and Solid Waste Action Coordinating Team (W2ASACT)** provides training resources for communities and has training materials and resources online <http://dnrc.mt.gov/divisions/cadd/wasact>. Please contact your funding partners for technical or financial assistance.

The RRGL program provides grants to communities to improve resource benefits. The RRGL project grants are limited to \$125,000 per project and fund projects that conserve, manage, develop or preserve Montana's renewable resources. Last cycle in 2018, we received 76 applications from around the state. The water and wastewater systems accounted for half of the applications. Project applications come from all parts of the state and represent highly diverse projects.

The RRGL planning grant program also funds planning activities to help communities and public entities plan for larger projects and develop the RRGL project applications. We have had two funding cycles and have awarded \$880,00 in planning grants this biennium.

Other DNRC RRGL grant programs also working across the state to benefit resources for Montanans. Find more information on <http://dnrc.mt.gov/grants-and-loans>

- \$300,000 for Irrigation Development Grants
- \$300,000 for Watershed Management Grants
- \$100,000 for Emergency Grants
- \$75,000 for Private Grants

With the arrival of Springtime often comes flooding and other resource emergencies to communities in Montana. **DNRC is here to help!** Please contact us to see how we can provide technical or financial assistance.

Regional Water Program

Dry Prairie – Dry Prairie has been constructing transmission mains for the Scobey-Flaxville Mainline Project, since May 2019. Contract for the Plentywood-to-Westby main segment has also been awarded. Dry Prairie also recently opened bids for construction of its Glasgow area field office. **Fort Peck Tribes** –Branch line installation work continues in numerous areas of the Reservation. There are at least four phases of branch line construction taking place. The terminus of the R-Y Road north-south transmission main, begun in 2017, marks the last interconnection between the Tribal system and Dry Prairie Rural Water Authority's system. Pipeline work is finished, with pump installation and tank construction continuing. A ceremony celebrating the completion was to have been held in May; it has been re-scheduled for August 18th.

North Central Montana Authority – Installation of the Shelby North project segment, with interim service water from Shelby's wellfield, is effectively complete. Upgrades to Shelby's wellfield are in progress, with recent drilling of replacements for 3 older wells which were declining in productivity. Upgrades to the City's ultraviolet disinfection array are under review by Montana DEQ. **Chippewa-Cree Tribe** – Construction of the 11 MGD capacity first phase of the water treatment plant for the Rocky Boy's – North Central regional system began in January, with Sletten Construction of Great Falls as the primary contractor. This phase is scheduled for completion by mid-2022. The Tribe intends to perform further work on the mainline to Box Elder and the Reservation area during 2020, utilizing funds from the most recent appropriations for the purpose.

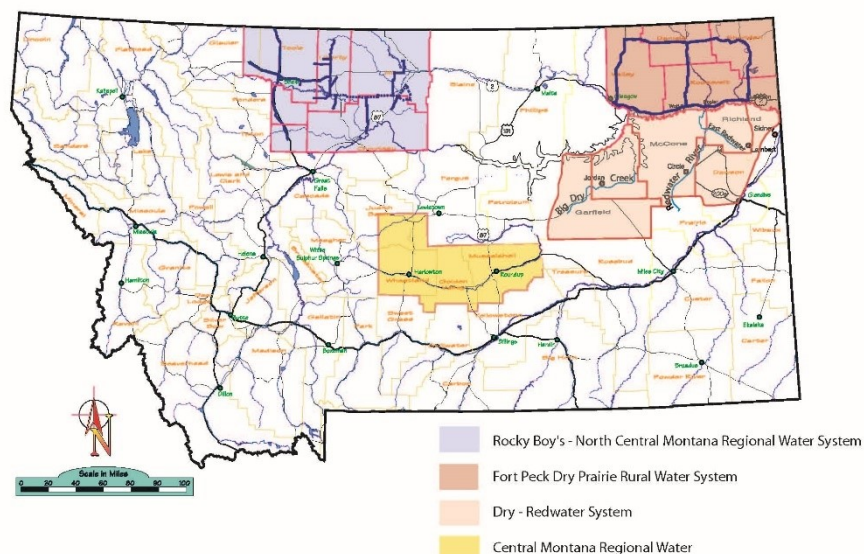
Continued on next page

Dry-Redwater – The design and construction of the Authority's next project, extension of sanitary sewer lines to the Sidney Circle subdivision area southwest of Sidney, in cooperation with Richland County government, are currently under development. City of Sidney wastewater treatment plant will treat the sewage.

Central Montana (Musselshell-Judith project) – Plans and specifications for Phase 1 construction, to bring Madison Aquifer water from the Authority's wellfield northwest of Judith Gap to Harlowton, are nearing completion. A 2nd production well was drilled to 2850 feet in October 2019 and was pump-tested at 1,250 gpm. Depending upon Congressional authorization, and policies of the US Bureau of Reclamation, the well could be subjected to additional testing.

The Federal Clean Water for Rural Communities Act, to authorize the Musselshell-Judith Project and to further study feasibility of the Dry-Redwater Project, was reintroduced by Senators Daines and Tester, has been given a favorable committee report by the Senate Energy and Natural Resources Committee in the 116th Congress. Sponsors and others working on the legislation are hoping to see it included in a larger bill dealing with water system infrastructure.

AREAS TO BE SERVED BY REGIONAL WATER SYSTEMS



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Anna Miller – Revolving Fund Loans

Rick Duncan - Regional Water

Lindsay Volpe – Renewable Resource Grant (RRG) Program

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Retirement: Have You Thought About It?

By Nick Clos, Circuit Rider

“Half our life is spent trying to find something to do with the time we have rushed though life trying to save” – Will Rogers

Do you remember drive-in movies? (would have been nice this last April, May & June)



Rotary phones?



Black & white television?



Drinking out of a garden hose?



Riding one of these?



If you answered “yes” chances are you’re a Baby Boomer, the generation born between 1946 and 1964. Currently one in five workers in Montana 55+. The number is even higher in government. As Montana’s population ages, the State will face new challenges moving into the future. Montana’s population growth is projected to continue into the near future. At the same time, a larger share of the State’s population is expected to get older.

As Montana cities and towns, water and sewer districts, and most public water/sewer systems begin to see a proportionally higher number of older employees, new challenges lie ahead for the community. Retirement is a hard-earned privilege that many of us look forward to (I know I am), a reward for decades of hard work. But for many companies, anticipating when key employees might be retiring can help your organization prepare for that inevitable day; even if it’s many years in the future. A wave of retirements can create a serious loss of knowledge from the system’s operations. To better prepare yourself:

- ♦ Make it a priority to have older employees share their knowledge and skills with younger staff members and encourage an open dialogue about long-term career plans long before you suspect an employee might be nearing retirement.
- ♦ Make sure written Standard Operating Procedures (S.O.P.s) are in place for important tasks.
- ♦ Make sure written Job Hazard Analyses (J.H.A.s) exist for dangerous tasks. (confined space, trench safety, lock out-tag out, wear the proper protection gear etc.)
- ♦ They are a written step-by-step guide line that an employee can follow to do the job right. The S.O.P. & J.H.A. can be combined and shouldn’t be mere paper in a binder. Use to train new employees. They are an attempt to transfer knowledge-which may currently be only in a long-time employee’s head and make it available to everyone.
- ♦ Don’t try to reinvent the wheel, many utilities share similar tasks and equipment. Contact other utilities and personalize the procedure to meet your needs.

Don’t be caught off guard, BE PREPARED





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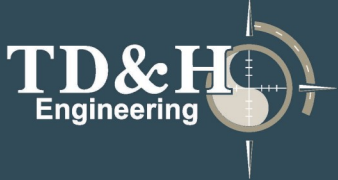
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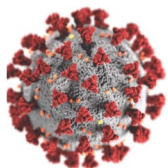


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What you should know about COVID-19 to protect yourself and others



Know about COVID-19

- Coronavirus (COVID-19) is an illness caused by a virus that can spread from person to person.
- The virus that causes COVID-19 is a new coronavirus that has spread throughout the world.
- COVID-19 symptoms can range from mild (or no symptoms) to severe illness.



Know how COVID-19 is spread

- You can become infected by coming into close contact (about 6 feet or two arm lengths) with a person who has COVID-19. COVID-19 is primarily spread from person to person.
- You can become infected from respiratory droplets when an infected person coughs, sneezes, or talks.
- You may also be able to get it by touching a surface or object that has the virus on it, and then by touching your mouth, nose, or eyes.



Protect yourself and others from COVID-19

- There is currently no vaccine to protect against COVID-19. The best way to protect yourself is to avoid being exposed to the virus that causes COVID-19.
- Stay home as much as possible and avoid close contact with others.
- Wear a cloth face covering that covers your nose and mouth in public settings.
- Clean and disinfect frequently touched surfaces.
- Wash your hands often with soap and water for at least 20 seconds, or use an alcohol-based hand sanitizer that contains at least 60% alcohol.



Practice social distancing

- Buy groceries and medicine, go to the doctor, and complete banking activities online when possible.
- If you must go in person, stay at least 6 feet away from others and disinfect items you must touch.
- Get deliveries and takeout, and limit in-person contact as much as possible.



Prevent the spread of COVID-19 if you are sick

- Stay home if you are sick, except to get medical care.
- Avoid public transportation, ride-sharing, or taxis.
- Separate yourself from other people and pets in your home.
- There is no specific treatment for COVID-19, but you can seek medical care to help relieve your symptoms.
- If you need medical attention, call ahead.



Know your risk for severe illness

- Everyone is at risk of getting COVID-19.
- Older adults and people of any age who have serious underlying medical conditions may be at higher risk for more severe illness.



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Kurtis Hillier	3C	Antonio Abril	2A	David Blankenship	1B
Gorm Scarpholt	3C	Ole Ruud	3C	Jacob Burg	4AB
Luke Shurtliff	3C	William LeFevre	4AB	Lyle Saimi	4AB
Todd Nevin	3C	Clay Fox	2A, 3B, 3C	TJ Fiscarelli	3C

In Office Exams November 2019 - March 2020

James Danko	1A	Todd Nevin	2B	Gerald Wagner	4AB
Dean Garfield	2B	Ransom Reibel	3B	Blaise Stepansky	2B
Trae Pruttis	2A	Kenneth Tipps	1C	Lewis Day	3C
David Hanson	4AB	Jack Arthur	1C	Gerald Morris	4AB
Daniel Lynch	1C	David Dorr	1B	Nathan Bell	3B
Kevin Hoffman	2A	Tyler Patton	4AB	Antonio Bonney	1A
Trenton Bailey	1A	Wendy Kessler	4AB	Tanner Marsh	3B
Ryan Townsend	2A	Dylan Martin	3B	Zachary Frieling	1C

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Information provided by Jen VandenBos – DEQ/PWS Certification Program

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Developing a Source Water Protection Plan in 5 Steps

by Erin Wall, Source Water Specialist

Are you interested in developing a Source Water Protection Plan?

Are you curious about what the process entails?

Are you uncertain if your system can benefit from developing a Source Water Protection Plan?

If you answered yes to any of the questions above, this article is for you!

Source water protection is intended to be a practical and cost-effective approach to protecting public drinking water supplies from contamination. Being proactive in protecting your system's water sources not only saves money but prevents major problems from occurring in the future.

1. Form a Planning Team

Involving local stakeholders builds trust between the utility and the community, shares responsibility, and fosters local ownership over the drinking water source. A planning team is critical to not only putting the plan together, but it ensures that the plan will be successful due to the development of local solutions and trust between stakeholders. Planning team participants should have diverse interests and backgrounds to develop a more comprehensive plan. Participants can include:

- Public safety officials
- Local government officials
- City or county planners
- Local public health personnel
- Local businesses
- NRCS
- Local DES Coordinator
- Farmers and ranchers
- Community groups such as your local watershed organization or conservation district

2. Delineate the Source Water Protection Area

Delineating the source water protection area can be as simple as looking at your system's Source Water Delineation and Assessment Report (SWDAR) or PWS-6 Report for new water sources. The SWDARs can be found on DEQ's website (<http://deq.mt.gov/water/drinkingwater/sourcewater>). Delineation of the protection area will differ for surface water and groundwater sources. Surface water protection areas are based on the distances upstream of the intake and at watershed scales. Groundwater protection areas differ based on the type of well (confined vs unconfined) and geologic/hydrologic conditions, but generally have 3 areas: control zone, inventory region, and recharge region. For systems with multiple water sources, protection areas may overlap. All protection areas should be identified on a map – this is critical for the next step!

3. Identify Potential Sources of Contamination

After all protection areas are identified and mapped, an inventory of potential contaminants is conducted. Any facilities, activities, or land uses where a contaminant is present that may be released in sufficient quantities that threaten human health are considered potential contaminant sources. Sources of all primary drinking water contaminants and cryptosporidium will be identified as possible. However, contaminants of the greatest concern are nitrate, microbial contaminants, solvents, metals, and pesticides. Examples of common contaminant sources are:

Continued on next page

- Septic systems
- Animal feedlots
- Cultivated cropland
- Mining
- Hazardous waste sites
- Underground storage tanks
- Wastewater treatment facilities
- Municipal sanitary and stormwater sewers
- Stormwater discharges
- Transportation routes such as highways and railroads

Susceptibility of the water source(s) are determined based on the hazard of the contaminant source and the number of barriers present. The more barriers that are in place, the lower the susceptibility.

4. Management Plan

This is where all the hard work of identifying the planning team, delineating protection areas, and identifying/assessing potential contaminant sources come together. The planning team comes together to determine the goals and objectives for their system and identify strategies to reduce the susceptibility for their source. Strategies can be adopting ordinances, management practices, pollution prevention programs, and outreach activities. If your community has suffered from drought or are concerned with water availability, that can also be addressed here. The idea is to develop a plan that is useful and will benefit your community. The planning team will also identify who will be implementing which action.

Contingency Plan

For some utilities, this may be the most attractive aspect of the Source Water Protection Plan. If an emergency happened, is your system equipped to respond quickly and efficiently? The contingency plan involves conducting a vulnerability assessment and how the system would respond in the event of an emergency. A chain of command, alternative water sources, and procedures to communicate with water users are all components of the contingency plan. This can be done to meet the new AWIA requirements for risk assessments and an Emergency Response Plan.

While developing and implementing a Source Water Protection Plan may seem time consuming and possibly confusing, MRWS is happy to help. MRWS is lucky to have two Source Water Specialists, myself and Kristi Kline, that will complete the assessment and help develop a plan that will be beneficial for your system.



Always a good crowd at the Small System and Colony Operator Training in Great Falls.

Operation and Maintenance. Taking the Proactive Approach

By Bobbie Shular. Circuit Rider

What does taking the pro-active approach to operation and maintenance due for your system? First and foremost it saves the system money, and the time of an operator. Specifically, the amount of time you as an operator invest into emergency repairs and after hour callouts decrease when the number of hours invested into a pro-active maintenance program increase. With warm weather, now is the time to schedule repairs and maintenance your system needs to sail thru the winter. Pro-active maintenance helps the system work towards being financially and operationally sustainable.

I found while performing summer duties, many of which began with mowing District properties, that mowing slowed me down and gave me time to really assess maintenance that the system buildings, sheds and cement work might need. As I passed by that crack in the cement or that corrosion spot for the fifth time while mowing that gave me time to notice a potential problem, stop and exam it, go thru my mental list of venders and formulate a plan for repair.

A list of maintenance items to make note of while mowing: cracks in cement reservoirs and foundations, condition of paint, roofing material, siding of buildings and sheds, evidence of rodent activity, fencing that needs to be repaired or replaced, valves that need to be marked and exercised. Materials from past repairs that need to be removed.

At this point in this article I want to highlight the importance of discouraging gophers and rabbits from building their home near system infrastructure. Rodent activity can and has damaged buried electrical cables that are critical to providing power to well pumps, turbine pumps, and chemical feed pumps. In addition to chewing thru electrical cables, the rodent holes can be an invitation to rattlesnakes to take up residence. This can present an extra hazard for operators to navigate around in rural areas in the completion of their tasks. If plant operators are loading up old piping from past repairs and maintenance in warm weather, please be extra vigilant for rodent and reptile activity. Old pipe is a favorite resting spot for both types of animals.

Other maintenance items to take care of during summer months may include removing debris from valve boxes, exercising valves, identifying valves that need to be replaced, exercising fire hydrants, possible painting of fire hydrants for corrosion control, replacing non-functional hydrants, identifying leaking curb boxes and replacing them, completing maintenance on water meter remote read wiring and meter read pad or radio read antenna's, antenna for telemetry; tank maintenance, inspection, and corrosion control, checking batteries and solar panels, and finally power poles. Montana can be windy country and it, with winter weather, can take its toll on system owned power poles and over several decades they can weaken to the point of needing to be replaced.

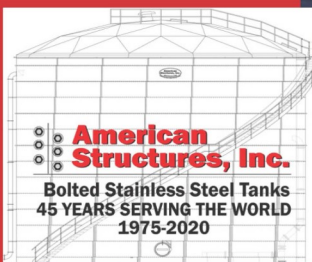
I have focused this article on the outside maintenance that is best to complete during the warm weather months, this article in no way encompasses all the maintenance needs that may be in your system. I am available to help with water operator certification review, rate analysis, by-law review and researching specific questions on policies and procedures that a system may have. My e-mail is Bshular@mrws.org.



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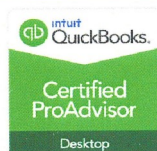
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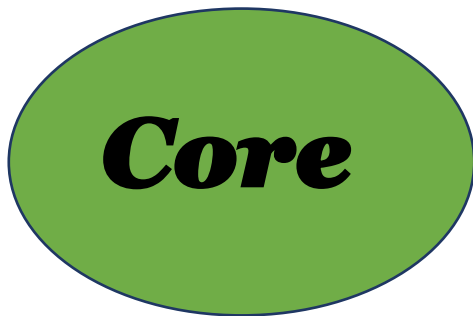
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Sustainability Message

By Dan Kramer, Circuit Rider, dkramer@mrws.org, 406-253-1710



The key to surviving 90 or more days is to surround yourself with people who have the skills and the knowledge to get it done. Anything else is for naught. This is the key. A good military unit is a skilled unit and the body, (unit) knows their job and doesn't have to be told what to do. They do it. This is the only model that will work. This is how I will build my presentation around and fight the good fight. Therefore, all other methods are fragmented and do not make the core. You must gather all the elements to be complete. I was teaching this but not the core thrust of the message. It takes all elements to complete the core. That is being. It takes the body to support the soul. Neither can live without the other, both completes each other, the whole. I guess this is a lesson on life. This is true on all things like machines, computers, people, the world, universe and the soul of who we are. We are a ripple in time and what we do now affects the future and whatever that is to be. So, gather those people, knowledge, resources and be sustainable and fight the good fight for your community and for all that is.



Like Minded people and core values
and objectives.

Knowledge Base and People Identified

Skills and able to work outside the
Box.

Resources

Identify hard assets, food, animal, shelter, and natural
resources to be sustainable.

Core

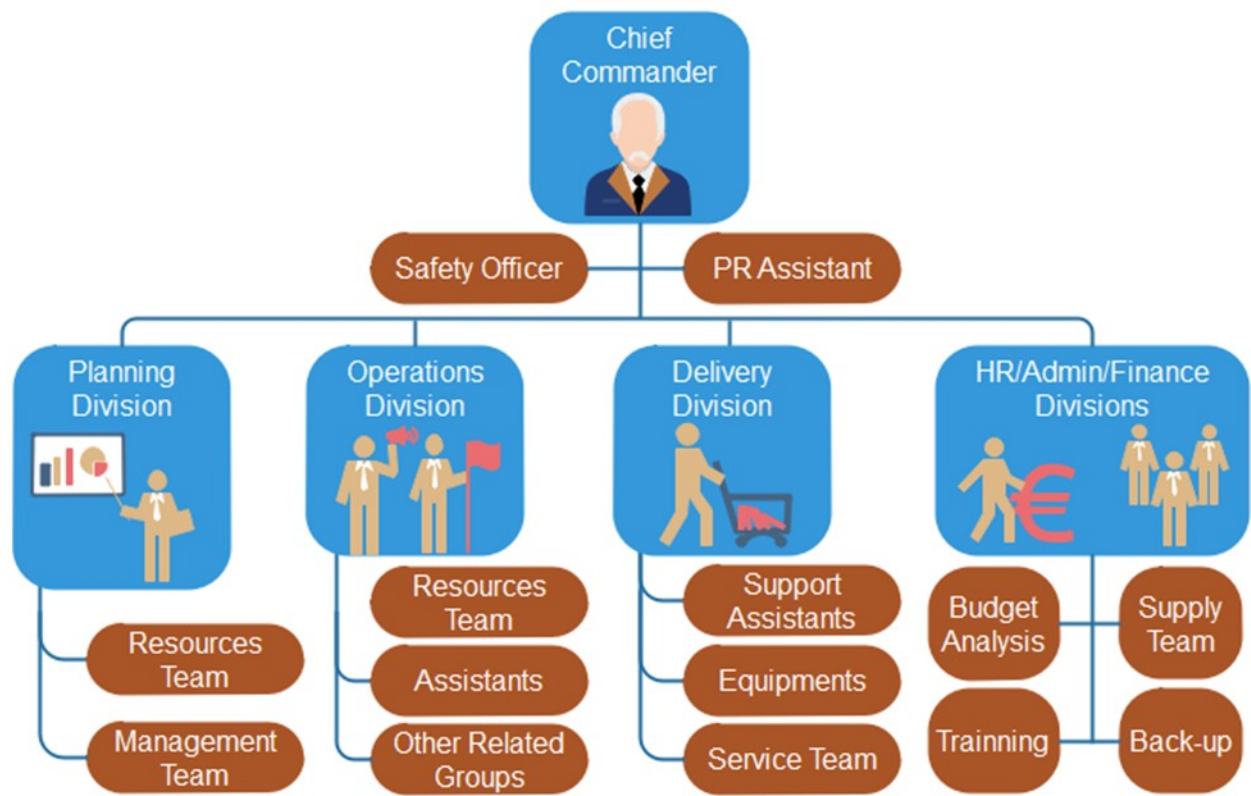
The Core becomes a singularity of the whole (a unit) and with the unit it brings about unity. In a simple applied form, everything is dependent each other and that is sustainability. Example; If you have a water plant it is dependent of many variables to make it work. If any of the variables fail the unit fails. Many operators or systems or agency find this very unsustainable and give up. No direction or plans how am I going to survive. The first thought is preservation mode. Who and what am I going to do? What about my family are they safe? I will abandon my post to make sure my family is taken care of. See there is no unity or direction, Helplessness. This is where that core comes in and all the variables are looked at and a plan to survive. This core becomes automatic and if you must think outside the box do it. Don't box yourself in. Everything is connected just need to know how to plug in. If that plug end is out moved to next one. If you do not know where to plug in find some that knows. There are always options. A chief engineer handed me a procedure for testing military equipment and my job was to rewrite the procedure so that the

everyday joe can perform the test. I want you know that is no easy thing to do. You cannot assume anything or even to set up equipment. You must tell that person step by step how to do the test and setup the equipment. That is why it important to have SOP (system operation plans) in place for all conditions. You may think that I need a plan only for my plant, you are mistaken. The plan will include the whole community and or town, city, district counsels and their roles and assigned tasked to be performed. Everyone is a variable and they are part of the solution. They are part of the whole, the body. If the conditions get bad enough there is a tipping point and the community will go into survival mode and it can be ugly. Through education and direction all things can be solved and worked out. Do not give up, that is a defeatist attitude, that is from not knowing. Fear is the destroyer of all things and that has no place when it comes to be sustainable, a unit, and unity conquers all.

SOP For Incident Command



ICS Org Chart Simple Template





Jon Dilliard's Retirement

The last several months have been a whirlwind in DEQ's Public Water Supply Bureau. Most of you are probably aware that Jon Dilliard retired at the end of 2019. You may not know that he retired after 33 years in state government serving the citizens of Montana. After five years as a registered sanitarian with Madison County, Jon began working in 1986 for what was then the Montana Department of Health and Environmental Sciences (DHES) as a consultant sanitarian and entomologist. He held various environmental specialist positions from 1987 until 1992, when he became the Program Manager of the Solid Waste Management Program at DHES. He became a bureau chief in 1997, by which time DHES had split into DEQ and the Department of Health and Human Services. Jon landed at DEQ in the Community Services Bureau, which contained the Public Water Supply Program, the Operator Certification Program, the Public Water Supply Engineering Program, and the Subdivision Program, among others. Over the years DEQ restructured its programs and Jon became responsible for the Public Water and Subdivisions Bureau which had the Public Water Supply Compliance Program, Plan Review Program (Public Water Plan Section and Subdivision Review Section), and the Operator Certification Program. By his retirement, Jon was bureau chief of the Public Water Supply Bureau, which houses the Public Water Supply Monitoring and Compliance Section supervised by Gino Pizzini, the Field Services Bureau supervised by Greg Butts, and the Technical Services and Operator Certification Section supervised by Greg Olsen. Jon was dedicated to protecting public health and was proud of the work that the Public Water Supply Bureau accomplished over the years. DEQ would like to recognize and thank Jon for his many years of dedicated service to DEQ and to the citizens of Montana, and we congratulate him on his retirement!

Adjustments due to COVID-19

Along with much of the state, most DEQ employees began working remotely in March. This has been a challenging transition, and we have been learning and adjusting along with all of you over the last month and a half. As we have said in previous updates and emails, public water systems fill an essential need and therefore it is critical for systems to continue to monitor as usual and to supply clean water. There are a few adjustments that DEQ has shared with systems to date. Those are re-iterated below:

Coliform sampling

While we are all taking precautions to protect ourselves, our families, and our neighbors from COVID-19, DEQ is allowing modification of the sample site plan to avoid sampling in homes when possible. Systems may use alternative sampling locations from low traffic sites, outside spigots, commercial areas or sampling stations as long as sampling is representative of the distribution system. If a sample site is modified from that listed in the sample plan, it should be noted on the sample bottle. For samples collected from outside spigots, extra caution should be taken to protect the quality of the sample. Because outside spigots are at greater risk for accidental contamination, if a sample collected from an outside spigot is positive for coliform bacteria, a subsequent sample must be collected from inside the building. A few additional guidelines follow:

- Bacteriological samples can be taken by homeowners who have been instructed on proper sampling technique and approved by DEQ (this is to be used only as a last resort).
- Systems that need to take multiple samples each week or month may take 2-3 bacteriological samples from the same tap in the distribution system.

Additionally, to provide an "increased level of protection," a system that maintains a minimum chlorine residual, at all points in its distribution system, of anything greater than 0.5 mg/L of FREE chlorine may change its sample sites to entry point or source samples. Systems that chlorinate at levels less than the 0.5 mg/L of FREE chlorine can increase their levels to take advantage of this option.

Exams canceled

To protect the health and well-being of our employees and communities during the COVID-19 response, DEQ's offices have been closed to the public. This is continuing into phase 1 of the Governor's phased reopening. Water and wastewater operator exams will not be administered until our offices re-open. If this poses a problem for your system, please contact us as we may be able to allow some flexibility if necessary.

Continuing education credits deadline extended

Due to the cancellation of many in-person opportunities to obtain continuing education credits (CECs), DEQ has extended the deadline for CECs until Aug. 31, 2020. DEQ also recorded the Billings water school and days one, two, and three have all been posted on DEQ's YouTube channel. Up to 20 hours of CECs are available by watching these videos and obtaining a supervisor's signature confirming your participation. DEQ's YouTube channel can be accessed here: <https://www.youtube.com/channel/UCZpuxN606ueNWkZBg7udweA/feed>

Montana Environmental Training Center

DEQ's Public Water Supply and Water Protection Bureaus have been working with the Montana Environmental Training Center (METC) Steering Committee, Montana State University (MSU)-Northern, and MSU-Bozeman to transition the METC from MSU-Northern to MSU-Bozeman. We are working on outlining needs that METC will need to meet as we move into the future, as well as steps to make the current transition as smooth as possible.

DEQ would like to thank MSU-Northern and Barb Coffman for providing many years of excellent technical guidance and training, and for coordinating information, training, and resources for water and wastewater operators and other environmental and public health professionals.

Continued Communication and Collaboration

During this time, ongoing communication is essential. DEQ is committed to continuing to collaborate with the Montana Rural Water Systems and others across the state to provide assistance, information, and resources to Montana's water and wastewater systems.

As the Public Water Supply Bureau's new bureau chief I can attest to the professionalism of the bureau and the high quality of work that they do. Jon Dilliard was right to be proud of the team that he built during his time here. One of the most impressive traits of the people on this team is their passionate commitment to assisting public water systems and Montana's water and wastewater operators. They are committed to protecting public health by upholding Montana's rules and regulations, but they also value all of you as dedicated professionals and want to work with you and assist you in this capacity however they can. And this extends beyond the Public Water Supply Bureau to the rest of the Water Quality Division. Therefore, please reach out with any questions or concerns. Water Quality Division contacts can be accessed from the following link: <http://deq.mt.gov/Water/Resources/SectionContacts>

Thank you all for the service you provide to the citizens of Montana.

Amy Steinmetz

406-444-2409

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