



DRINKING WATER

## Utah Division of Drinking Water *Mission Statement*

Cooperatively work with drinking water professionals and the public to ensure a safe and reliable supply of drinking water.



Emergency response in Flint, MI



## this issue

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## Division Director Kenneth H. Bousfield's Report

If you paid any attention at all to the news as broadcast on the television networks or read any newspapers, you've heard about the issue of lead found in Flint, Michigan's water system.

You may have also learned about Sebring, Ohio, where two EPA employees were fired and a third EPA employee was demoted for the lack of adequate follow-up on the State of Ohio's dealings with lead found in Sebring.

I have been interviewed by the Deseret News, the Salt Lake Tribune, the Logan Daily Herald and the St. George Spectrum. I have also been interviewed on KSL television and radio as well as KUER radio. All these interviews have dealt with the compliance of Utah's water systems with the lead rule.

In March of this year, I attended a meeting, in Washington D.C., with my counterparts throughout the country as well as EPA Headquarters staff. On the first day of the meeting all of the speakers mentioned lead in drinking water. Further in talking with my colleagues during conference breaks the subject of lead in drinking water came up.

Because of these national and local articles and broadcasts, you may have been asked by friends, neighbors, or your water customers about the lead levels in the water from your water system. Were you prepared to respond? What did you tell them? Undoubtedly, as a result of the first questioning, you became prepared to discuss the issue with subsequent inquirers.

While this may have created stress for you, there is an upside to all of this. The upside is that the attention of

the public has risen relative to the drinking water supplied to their homes. I believe in recent times, before this lead in Flint issue was discovered, most people didn't even think about water safety issues when turning on the tap and filling up a cup of water, or using it within their household for various purposes. In essence, people have been taking the work you do for granted.

In the April edition of the American Water Works Association Journal, the Chief Executive Officer, David B. LeFrance, published an article entitled: "Restoring Faith" which dealt specifically with the lead issues. As the title of the article suggests, he encouraged water utility personnel to take the opportunity to let their customers know what they are doing to ensure that the water they are supplying is safe to drink. In the article, Mr. LeFrance suggested that water systems prepare a communications plan to accomplish the task of "restoring faith" in the water supply.

On April 20, I received an e-mail that I understand was sent to members of the Rural Water Association of Utah, where Dale Pierson, the author of the e-mail, talked about taking advantage of this opportunity. He presented, in the e-mail, an outline of specific topics that water systems should be discussing with their customers. This recommendation is another encouragement to take action to restore the customer's confidence in their water supply.

At the end of June of this year all water systems must prepare and distribute a Consumer Confidence Report, reporting on water quality data for the calendar year

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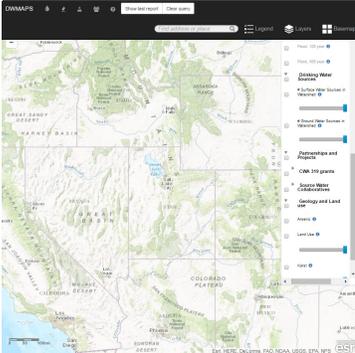


Kenneth H. Bousfield

## EYE ON IT

### DWMaps

Add a new tool to your Source Protection toolbox!



EPA has released a new online map tool called "DWMaps". The application can be found at

<https://epamap37.epa.gov/dwmaps/index.html>.

Although UDEQ has provided a state-wide mapping tool for several years (the Interactive Map at

<http://enviro.deq.utah.gov/>),

the two applications have subtle differences, and using both will provide you with a more complete picture of what potential contamination sources (PCSs) may impact your drinking water source. *Here's a breakdown of the advantages of both:*

**UDEQ's Interactive Map:** after requesting and receiving a login (upper right corner of main page), the application allows you to look at your specific protection zones and determine exactly what PCSs are close to your source. Data is updated daily, so you can be confident that the

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## Kenneth Bousfield's Report

2015. This also presents itself as an opportunity to tell your story of the good things you are doing.

In addition to all of the issues surrounding lead, it's important for us, in Utah, to look more globally than just at lead levels in our water systems.

We should also be concerned about total coliform and E. Coli sample results as they are the most commonly found contaminants in our State. Other things that effect drinking water quality are: nitrate, arsenic, disinfection by-products, inorganic chemicals, organic compounds, and radionuclide contaminants. The rules that, sometimes may seem annoying and burdensome, are there to ensure the safety of the drinking water supply.

Now specifically for lead, there are some issues that are different from any other contaminants that are being monitored. Lead samples are collected by homeowners. The lead rule is specific in requiring that the sample be taken from a tap that has not been use

for at least six hours prior to collecting the sample. Typically this event occurs early in the morning before the residents have flushed toilets, shaved, showered, or taken any medications that they may be required to take.

Consequently the lead and copper rule allows water systems to leave sample bottles with homeowners. In this regard there are several things that are important to remember. In particular the samples must be collected from

kitchen or bathroom taps in homes that have a high probability of having lead in their service line piping. Such homes include: **a)** homes that are served by lead service laterals, **b)** homes that have internal lead plumbing, and **c)** homes with copper piping where lead solder was used at the pipe joints.

The other precaution is to avoid taps that have not been used for an extended period of time. It needs to be representative of taps that are typically used on a daily basis. And the

rule requires only the non-use of the water for six hours prior to sampling. As a general rule of thumb I would suggest you counsel with the homeowners to ensure that they are not taking samples from taps that have not been used for more than ten hours prior to collecting the sample.

Regarding other contaminants, the sampling for total coliform is designed to ensure that samples are taken throughout the entire distribution system, over time, to ensure that all customers' water is safe to drink. Disinfection by-products samples are taken at the far reaches of the distribution system to ensure, like the lead and copper sampling, that the highest values are measured. The principal behind obtaining the highest sample results is to ensure that if the highest results are compliant, samples at any other site will also be compliant.

The Division of Drinking Water staff are here to help water systems comply with the rules. If you have any questions about sampling requirement, or sample results showing quality problems, please feel free to call our office. We're here to help. 💧

**Coliform and E. Coli are the most commonly found contaminants in our state.**



# 9

## Things You Need To Know About the Revised Total Coliform Rule

by Patti Fauver



**1.** There is no longer any quarterly bacteriological monitoring in Utah. All system types are now required to sample at least once each month they serve water to the public. The greater sampling frequency helps systems faster identify potential risks to their customer's health.

**2.** Monitoring and reporting are now separate violations. Under the 1991 rule failure to take samples and not submitting the results to the primacy agency resulted in a single violation. The RTCR treats these as distinct violations. This means systems, now more than ever, should be checking **WaterLink** (<https://waterlink.utah.gov>) to ensure the state has received their most recent samples.

**3.** Sample site plans are more important than ever. Utah has not yet set a deadline to submit a current copy of system's bacteriological sample site plan. Systems should take this time to review current sample site plans and protocols. Sample site plans are still reviewed during regular sanitary surveys. They are now also evaluated during Level 1 and 2 assessments. If you do not currently have a sample site plan for your system guidance documents and a template for creating one are available on the DDW website.

**4.** A Level 1 Assessment is required when a system collecting less than 40 samples a month has two or more TC positives in the same month. Systems who collect more than 40 samples a month the Level 1 threshold is 5.0% positive samples. All systems must conduct a Level 1 Assessment if they fail to take the required repeat samples.

**5.** Systems conduct Level 1 Assessments. Its purpose is to identify why the positive sample(s) occurred. Systems look at their facilities (sources, tanks, distribution system) for potential sources of contamination. Sample protocols and sample site locations are also evaluated. Systems have 30 days from the date of notification to conduct and submit certification to DDW.

**6.** E. Coli MCL violations or two Level 1 Assessments in a rolling twelve month period trigger a Level 2 Assessment. DDW Staff, DEQ District Engineer or other personnel authorized by DDW conduct a Level 2 Assessment. This assessment is similar to, but does not replace, required sanitary surveys.

**7.** Regardless of who conducts the assessment, the system is responsible for ensuring they're conducted. Systems must correct identified deficiencies found during either a Level 1 or 2 Assessment. Failure to conduct either or correct deficiencies will result in a Treatment Technique Violation.

**8.** Seasonal Systems must notify DDW of their annual start-up procedures before opening. A guidance document for creating a start-up procedure is available on DDW's website.

All seasonal systems must take a clean investigative TC sample ahead of opening. This will help DDW know which systems are open and avoid issuing violations to systems not open for a season. Systems will be better prepared to serve safe water from the first customer to the last.

**9.** Fecal coliform methods are no longer allowed for sample analysis. To the Division's knowledge all certified labs are now using E. coli sample methods for your bacteriological samples. If you have concerns, you should verify this with your laboratory. ●

*Patti Fauver is the Rules Program Manager.*

### DWMaps

Continued

information you're viewing is timely. UDEQ maintains information about the facilities identified on our maps, so you can get more detailed information easily, in some cases right from the internet.

**EPA's DWMaps:** includes PCSs that UDEQ does not publish on the Interactive Map, such as pipelines and railroads. DWMaps shows locations of watersheds that have associated water quality grants and partnerships, which might help you leverage your protection efforts, and identifies waters listed as "impaired" under the Clean Water Act.

**Disadvantages:** DWMaps contains some data that is old enough to be invalid. For information about specific PCSs (i.e., underground storage tanks and other regulated sites), we recommend that you rely on UDEQ's Interactive Maps.

When you're ready to prepare your next source protection update, take a moment to look at these two sites, see what may have changed in your protection zones, and use the information to better protect your drinking water sources. ●

*Contact Deidre Beck or Kate Johnson at 801-536-4200 for more information on these tools.*

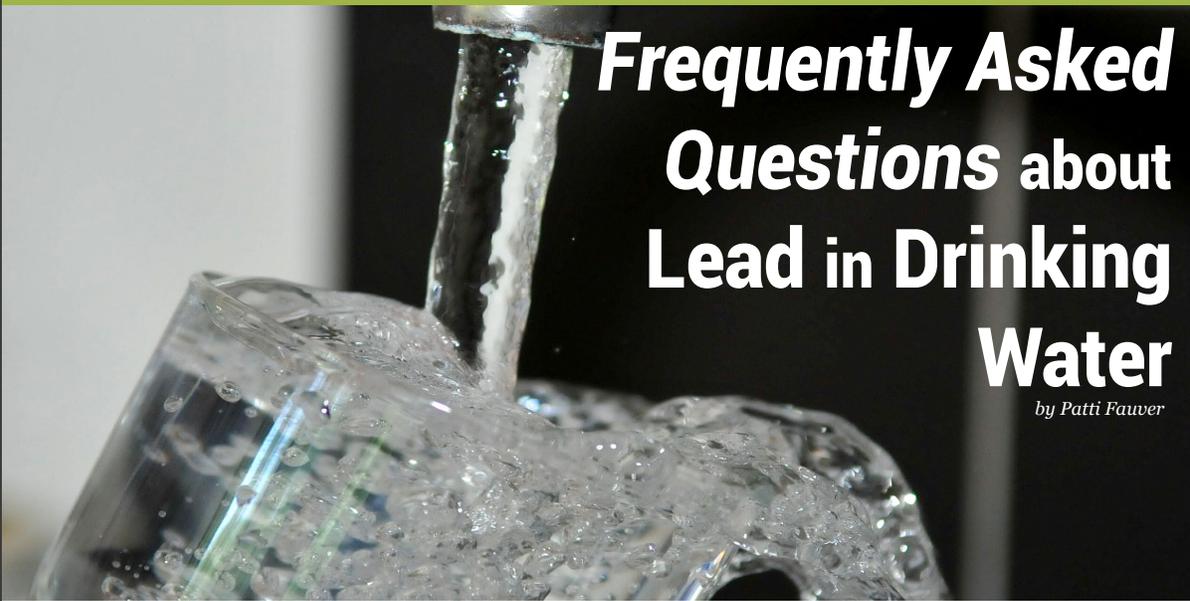
*Sample site plans are more important than ever.*

## NEW DIVISION STAFF

*D'yani Wood*

*D'yani Wood is the new support staff for Field Services! If you need to reach her, try email, [dyaniwood@utah.gov](mailto:dyaniwood@utah.gov), or phone, 801.536.4246.*

I have experience with graphic design, which means I like to mess with how things look and the ease in which things can be understood, specifically visually. I'm taking on the OpenLine newsletter and making it look great, which will provide better communication between everyone. Working with computers and technology comes naturally to me. I am currently a writer for [PlayStationLifeStyle.net](http://PlayStationLifeStyle.net) where I get to review games and sometimes contribute to other articles, meaning I love writing and creating. My husband is Senior Editor of the site, as well, which means we are both serious video game hobbyists. Along with video games, I consume as much media as I can in the form of TV shows, movies, and books. I have three cats in keeping with my lifelong love for animals. I am originally from Boise, Idaho, but I'm loving my life here in Utah. I'm excited to keep helping here and generate new ideas to help communication and productivity at any turn in the road. 🐾



# Frequently Asked Questions about Lead in Drinking Water

by Patti Fauver

## The health effects of lead:

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children.

## Water Corrosion

Water Corrosion is the deterioration of piping or fixtures due to the reactive properties of the water running through them. A water's corrosive tendency will depend of its physical and chemical characteristics such as temperature, pH, hardness, and alkalinity. Piping typically has a mineral scale built up on its interior surface to protect from the lead in the service line from leaching into the water supply. Corrosive water can destroy this scale and allow for leaching to occur.

## The Homeowner or Business' Responsibility in Regards to Lead

Replacement of service pipes on private property and any leaded plumbing materials within the home is a homeowner's responsibility. Your water system owns the service pipe from the water main to the curb stop valve, and that is the water system's responsibility. This valve is normally located two feet in from the street curb. From there to the house is private property and the responsibility of the homeowner.

## The Possibility of Lead in Household Plumbing

Beyond the possibility of having a lead service line, the most common problem in household plumbing is with brass or chrome-plated brass faucets and fixtures with lead solder. Significant amounts of lead can enter into the water, especially hot water from this lead solder. Homes built before 1986 are more likely to have lead pipes, fixtures and solder.

## How to Reduce Exposure

- 1. Run your water to flush out lead.** Run water for 15 - 30 seconds to flush lead from interior plumbing or until it becomes cold or reaches a steady temperature before using it for drinking or cooking, if it hasn't been used for several hours.
- 2. Use cold water for cooking and preparing baby formula.** Lead dissolves more easily into hot water.
- 3. Do not boil water to remove lead.** Boiling water will not reduce lead.

## How a Homeowner or Business May Initiate Sampling for Lead and the Costs Involved

You may want to test if you live in a high-rise building where flushing might not work, or if your service connector is made of lead. Testing costs between \$20-\$100. It is best to do both a first draw sample a flush sample to ensure that flushing your piping is sure way of reducing your exposure. A list of labs certified for lead and

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## EYE ON IT

### Screencasts Help Operators

Did you know the Division of Drinking Water offers online screencasts and quizzes for CEU credit? You can take **one quiz per subject every renewal period**, or every three years. This is a great way to top up on CEUs to reach your required CEU amount before you need to renew your certification. You can watch the videos from anywhere, and take the quiz when you are ready.



Our available screencasts can be found here:

 <http://www.deq.utah.gov/Certification/training/drinkingwater/training.htm>

Stay tuned for more new screencasts being added in the future. We are trying to help our operators pass more exams and learn better and more accessibly. 

# Water Fluoridation & Rule Revision

By Nagendra Dev & Ying-Ying Macauley

## What is Drinking Water Fluoridation?

Water fluoridation is the adjustment of fluoride in drinking water to a level considered by the Centers for Disease Control and Prevention (CDC) to be optimal for protecting teeth against dental decay. Tooth decay is a largely preventable disease that affects both children and adults and can cause considerable pain and suffering.

Proponents of fluoridation consider it to be a repair kit that constantly neutralizes the effect of acids that cause decay and helps to repair damage before it becomes permanent. They also consider it to be an inexpensive, easy, and effective way to improve public health in a socially equitable manner.

Opponents of fluoridation point to the adverse effects of fluorosis and potential risks of fluoride poisoning from excessive fluoridation. They also consider it to be mass medication and believe there are better means of providing fluoride supplements to the public such as fluoride tablets, fluoride tooth paste,

fluoride mouth rinse, topical fluoride varnish, etc.

## Utah's Regulations Regarding Fluoridation

State and federal regulations require the fluoride level in drinking water not to exceed the primary maximum contaminant level (MCL) of 4.0 mg/L. In addition, if the drinking water fluoride level exceeds the secondary MCL of 2.0 mg/L, water systems must provide the special public notice listed in Utah Administrative Code R309-220-11. Utah's public water systems that have fluoridation facilities also must meet the statewide design and construction standards (R309-535-5) set by the Utah Division of Drinking Water.

In 2001, the voters in Salt Lake County and Davis County voted to fluoridate their drinking water. Public water systems in these two counties are now required to comply with:

1. an optimal fluoride level of 0.7 mg/L in drinking water (as determined by the local health departments),
2. the fluoridation monitoring and

reporting requirements set by the local health departments, and

3. the record keeping requirements per House Bill 72 (HB 72 became effective on July 1, 2013).

## Revising the Rule Governing Fluoridation Facility Design

Utah Division of Drinking Water staff is drafting changes to the current design and construction standards for fluoridation facilities (R309-535-5). This rule does not mandate or prohibit adding fluoride to drinking water. However, if a public water system chooses to add fluoride to drinking water, this rule specifies how fluoridation facilities must be designed and constructed to ensure operator safety and protection of public health.

The existing R309-535-5 rule is largely based on an outdated version of the fluoridation requirements in the Recommended Standards for Water Works (Ten States Standards). Based on experience we have gained since 2001, we feel it is necessary to update the outdated design standards to make fluoridation facilities safe and to minimize the possibility

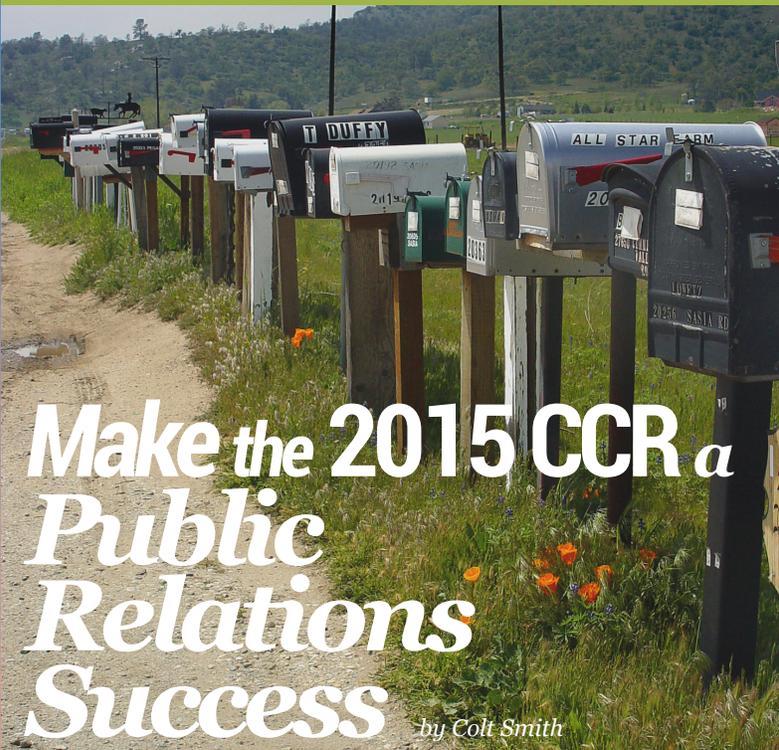
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# Ways to Conserve Water



- \* Choose drought tolerant plants.
- \* Water during the coolest part of the day.
- \* Avoid watering on windy days.
- \* Adjust lawn mower height to 1.5 to 2 inches.
- \* Water dry spots by hand.
- \* Use a broom to clean driveways and sidewalks.
- \* Turn off running water while brushing teeth & washing your car.
- \* Check faucets, toilets, sprinklers, and pipes for leaks.

- \* Low-flow shower heads.
- \* Replace toilets installed before 1992.
- \* Use Water Sense & Energy Star water-efficient appliances.



# Make the 2015 CCR a Public Relations Success

by Colt Smith

“So what do you do?”

“I’m an environmental scientist for the state, I deal with drinking water.”

“Oh, that sounds interesting.”

For the first part of my career at the Utah Division of Drinking Water, this scene played at every party where I was introduced to new people. On occasion, I’d go on to explain that I managed the Consumer Confidence Rule. Or as I’d explain “that thing you get with your water bill”. Then the conversation moved to how the Utes were doing. Flint changed that.

After Flint, old friends and new acquaintances found an interest in my job. Friends started bringing me CCRs. A two-year old’s birthday was interrupted with questions about barium MCLs. At the opera, intermission found me in black-tie explaining arsenic. Around a campfire in the Uintas friends asked about coliform bacteria. My mother-in-law called from Pittsburgh to have me go over her CCR via Skype. The public we serve no longer take the safety of their water for granted.

The anger around the lack of information shared with the public in Flint is second only to the physical harm. Residents were misled by the people they trusted to provide clean water. Because of that, this year’s CCRs will be under more scrutiny than before. This, however, is not a negative. This is the best chance we have to showcase the success of your water or to honestly convey shortcomings. In the following paragraphs you will find suggestions on how to make the 2015 CCR a public relations success.

## Cross Connection Control

One requirement of a compliant Cross Connection Control program is public education. Community water systems can educate the public via their CCR. Including information about avoiding backflow and how residents can be proactive in protecting their water supply will empower customers with the safety of their water.

## Storm Drain Contamination

Educate consumers about how what goes down the storm drains impact what comes out in their kitchen. Inform the public how not picking up after pets impacts the

quality and safety of their aquifer. Educated residents forms a partnership in providing safe water.

## Conservation

Address the need for conservation and share conservation tips with your customers. Highlight the measures taken by your system to curb water loss. Remind users of the importance they have in conserving water.

## Frequently Asked Questions (FAQs)

Answer the questions your customers most ask. Why does my water taste like chlorine? Why does my water bill fluctuate from month to month? Do we Fluoridate? Why do\don’t we fluoridate? How should I setup my in home water softener? A ready document to answer common questions shows your water system’s commitment to keeping customers informed.

## Bottled Water

The first thing I learned in my economics 101 class was that Coke wasn’t just competing with Pepsi. They were competing with orange juice, coffee, and tap water. Anything that you could drink that wasn’t Coca-Cola was their competition. Thus bottled water was born. Use the CCR to state the case for why your tap water is better than bottled water. Explain the rigorous testing and standards public drinking water is subjected to versus bottled water. An infographic showing the cost of their tap water next to the market cost for a similar amount bottled water might be reminder that water rates aren’t that bad.

## Exciting Projects

Is your system involved in the Energy Nexus project? What will that mean for them? Are you replacing lines or adding a new treatment facility? Did you re-coat a tank or take any steps this past year to

improve your water system? Show the public where their money goes and how it is an investment in the future of their community.

### Highlight Staff

A brief biography or photo of operators and staff members makes the CCR personal. Farmer's markets have gained in popularity at least in part because people wanted to know who grew or raised their food. Let customers know who protects their water. Talk about the required training, testing and certification operators undergo. Customer's confidence increases knowing the hands managing their water belong to dedicated professionals. It also recognizes the hard work of operators and staff

### How to Handle Violations

By rule systems must include violations in their CCR. The violation language includes an explanation of what wrong and the subsequent corrective actions. Address this in detail. Convey that your system is serious about compliance. Include a narrative of why the violation occurred. If you missed a nitrate sample because you had a new operator, be honest about that. Write that you are working to return to compliance as soon as possible. You can add information about why a missed sample may not pose an immediate risk to public health. For example, a statement that previous nitrate samples were within safe levels.

### Home Filtration Units

Neither the state nor EPA endorse home filtration units. If customers ask about them, often, providing direction to the National Sanitary Foundation could be helpful.

### Electronic Distribution and Social Media

Twitter, Facebook and other social media platforms alone are not an approved distribution methods for CCRs. Social media is encouraged to increase readership and drive traffic to online CCRs. Social media allows water systems to respond to questions and promote their successes. Photo platforms like Instagram or Flickr can show sample collection, flushing distribution lines or facilities educating the public on how clean water come to their tap.

Distribution by email or website requires approval from the Division of Drinking Water. A system must show a way of reaching non-bill paying customers and those who may not have internet access. Contact Colt Smith with DDW for more information.

### Find Your CCR

The EPA houses a search tool for the public to find their local CCR. All systems are encouraged to link their CCRs to this site. If someone is Googling "Where is my CCR" this is of the first items listed. Currently, of

the almost 500 systems in Utah subject to the CCR rule only seven make use of this site. And only one of those has a functioning link to its current CCR.

The CCR Rule has for many been viewed as more a bureaucratic hassle than a valuable means to communicate with customers. Take this time when the public is genuinely interested in their tap to inform them and make them a partner in providing clean water. 🍷

*Colt Smith is the Consumer Confidence Report and Public Notice Rules Manager.*

## Reporting Lead and Copper in your CCR

Reporting Lead & Copper results in the CCR can be tricky because neither have an MCL. They have an Action Level (AL – the level at which action must be taken to address the contaminant if more than 10% of the results taken in any one monitoring round exceed the AL). This value is calculated and identified as the 90th percentile. You must enter the 90th percentile value AND the number of samples exceeding the AL for your LAST round (regardless of year) of Lead and Copper results into your CCR. Your 90th percentile value is calculated for you by the Division of Drinking Water and is available in the **Waterlink CCR Module** under the **Public** tab. 🍷

## NEW DIVISION STAFF

*Emily Frary*

*Emily Frary is the new Environmental Scientist for the Rules section! If you need to reach her, try email, [emilyfrary@utah.gov](mailto:emilyfrary@utah.gov), or phone, 801.536.0070.*

I am the Arsenic, Nitrate, Lead and Copper Rule Manager at the Division of Drinking Water. After growing up in Provo, I converted to a fan of the University of Utah where I received a Bachelor's degree in Chemistry with an emphasis in Materials Science. I hope to continue my education. Outside of the office I enjoy camping, weekend vacations, and spending time with my family. 💧

*hiking at Frary Peak*



# Emergency Planning for Water Systems

*Know what actions to take before  
you need to take them*

*by Kim Dyches*

**E**ach water system needs to sit down and establish a list of contact agencies that may be involved in an emergency. Government agencies can vary from local, county and State agencies. Each water system is operationally different. There are pressure zones, storage capacity and sources that play a role in the planning process. Every system has interdependencies such as power needs, fuel for generators, gas, and other utilities such as communication companies.

Neighboring water systems can play a role in effectively carrying out an emergency response. Neighboring agencies could bring resources rapidly. Neighboring water systems can speed up the response and recovery process. The UT-WARN (see article on facing page) is a great resource and can be utilized by becoming a member.

There are also federal agencies that may get involved in the event of larger disasters. Agencies such as FEMA, EPA, DHS, CDC, and the FBI could be involved depending on the scope and severity of the event. For example, if your water system received a threatening phone call and the threat was deemed credible, the FBI may be part of investigating the incident. It is a federal crime to threaten or tamper with a public water system. The penalties for threatening a water system are a possible imprison-

ment of 10 years and/or a \$100,000 fine. If a perpetrator were to tamper with a public water system the penalties could be 20 years in prison and/or \$1,000,000 fine.

State Agencies such as the Division of Drinking Water, Division of Water Quality, Department of Health and the State Labs may play a role in the response. These agencies can act as support agencies that can bring in resources from anywhere. Local agencies such as police, fire, emergency management, hospitals, pharmacies, computer systems, and HAZ/MAT could be involved in a response. Hospitals, schools and care centers with immune compromised populations should be listed as agencies to contact in the event of a water contamination. In a water contamination event, these areas of your population would be most susceptible to harm or injury.

Each system has different vendors to consider as well. You should consider companies that sell or rent heavy equipment for excavation, backup power generators, plumbing fittings such as repair clamps, and welders/welding equipment. These systems should be listed and possibly have memorandums of understanding pre-signed prior to an event. You should identify and address needs specific to your water system. Each water system should have maps of where the water transmission lines, distribution lines, residential connections, valve

locations, and where the critical components of the water system are located. You should have a map of reliable sample sites that are representative of the entire water system.

Last but not least, once you have developed your plan, you need to test it. By having tabletop, functional, and full scale exercises you can test your plan. Exercises should be designed to test different aspects of your plan. For example, you could test the communications within your system to see if the communication is effective and the messages are clear. You should be certified in incident command and NIMS which is free and can be done online at

*Once you have developed your plan, you need to test it.*

<https://training.fema.gov/is/crslist.aspx>

From there you should take the IS 100 courses and the IS 700 for National Incident Management System (NIMS).

You never know what could happen, and many people rely on their water system to sustain their families and community in an emergency. Having a thorough plan and putting it into practice will make us all sleep a little easier. 💧

*Kim Dyches is the Field Services Program Manager.*



# Are You a Member of UTWARN?

"Utah Water and Wastewater Agency Response Network" is an important resource for all of us. To become a member, go to:

<http://www.utwarn.org/>

also linked at Rural Water website

<http://www.rwau.net/>

For information on joining the "Utilities helping Utilities" network, click on "Become a

member", scroll through the steps listed.

There is some paperwork involved and agreements that need to be signed by the utility manager. Just send these to:

**Rural Water Association of Utah**  
Attn: Shantell Cummins / UTWARN  
76 Red Pine Drive  
Alpine, UT 84004  
Phone: 801-756-5123  
Fax: 801-756-5036

Members, please log in and confirm/modify your utility contact information. Please list **3 contacts** if possible. *Include cell phone numbers and emails!*

Sign up for UTWARN Twitter and text messages to access that emergency information when other methods of communication have failed.

## EYE ON IT

### Lending Library

Did you know you can check out books and other media from the Drinking Water Lending Library for free? Come take a look at what we have to offer at our new library website:

[DDWUT.librarika.com](http://DDWUT.librarika.com)

More information on page 10.



## TAKEN AN EXAM?

### Tell us how it went!

We want your feedback on your exam experience. Whether you passed or failed, we want to know what helped you prepare or what could have made it easier. Anyone who has taken an exam, no matter how long ago, can take this survey and help make Utah's certification program the best in the country! We'll be adding study resources based on your feedback.

Just go to:

<http://goo.gl/forms/ITj5eYupSM>

## Statistics from the 2016 Rural Water Conference in St. George

- The Utah Division of Drinking Water lead 22 presentations
- 10 pre-arranged formal meetings with water utility personnel
- 137 consumer confidence reports produced
- 1,931 attendees
- 149 reports dealing with monitoring requirements, inventory, operator certification records and IPS reports
- 178 vendors
- 6 discussions on preparing or updating source protections plans
- 226 booths
- 18 consultations on varying issues brought up by water utility personnel
- 91 individuals took the operator certification class with a 68% pass rate
- 37 individuals took the wastewater certification class

## NEW DIVISION STAFF

### Kelly Casteel

*Kelly Casteel is the new Environmental Engineer III for the Engineering section! If you need to reach her, try email, [kcasteel@utah.gov](mailto:kcasteel@utah.gov), or phone, 801.536.4265.*

I am a Utah native; I grew up as a desert rat in eastern Utah. I graduated from Utah State University with a B.S. in Civil Engineering. So far my career has encompassed a tenure with the USDA-NRCS, Utah, State of North Dakota State Water Commission, State of Utah Division of Air Quality, and finally, to my current position with the Utah Division of Drinking Water. I have had the opportunity to be intimately involved in on-farm ag engineering; from sprinkler design to animal waste to stream restoration. Then while in North Dakota I refined my skills with surface water hydrology and hydraulics, although most of my time was spent on Missouri River management issues. Then I shifted for a bit and learned the regulatory process and issued air quality permits for Minor Source New Source Review. In my free time I am busy being a mom and looking after my beautiful family. I am beyond excited to have the opportunity to start a new adventure with the Division of Drinking Water. 



**D**o you know how much energy you use? Do you know how much money you pay to operate your facilities? Do you know where to start when thinking about energy efficiency? The Division of Drinking Water wants to help you understand how these topics affect your water system. Although they are not simple, if time is taken to understand these issues they can help you know how to save money on your water system.

From small water systems of 30 people to large systems of 100,000+ customers, savings around 20-30% of your total power bills can be seen. Most of the water systems that have already started have saved more than that! This following sample is a small taste of some lesson plans that will be made available soon to better help you understand your energy bills and save money because of that.

### Energy and Power Costs

#### Energy and Power Charges

For most water systems, power companies will charge for the highest power used and the total energy used during the billing period. Understanding the difference between the two and how they can affect

your power bill can give insights on how to be more energy efficient. The relationship is shown in the equation below, with some definitions that explain what Power and Energy are.

$$\text{Energy} = \text{Power} * \text{Time}$$

or

$$\text{Power} = \frac{\text{Energy}}{\text{Time}}$$

**Power** is the *rate* at which energy is being generated or used. This is comparable to the flow of water in a system, which is a measure of the rate or speed that the water can travel through the system. This can also be thought about in term of how "large is the pipe" that is delivering the water. Typical units are kilowatts (kW). This can also be sometimes referred to as "demand."

**Energy** is the *unit* amount that was used to do the work. This would be comparable to the volume delivered by a water system. For example, it could be referring to the amount of gallons that were delivered in a particular month. Typical units are kilowatt hours (kWh).

So why are water systems charged for both? Well, in addition to be charged for how much energy the system uses the peak power (demand) placed on the electrical grid also places a toll on the

## Energy Savings Strategy Plan



power company. The power is like them changing the pipe size so that they can deliver the necessary power to run your infrastructure. They have to be able to provide both for your system to work, so that's why you get charged for both.

### Power Rates in Utah

Since most of Utah is served by the Rocky Mountain Power Company, their rates will be summarized here. Although other companies provided similar rates or schedules and users should do their best to understand the rates and pick an appropriate one. As of April 2016, there are several common power rates or schedules used by water systems. These are Rates 6, 6A, 6B, 8, 9, and 23.

*...continued on page 13*

## Division of Drinking Water Online Tips

### Q: How do I track my CEUs online?

A: We have a brand new feature in WaterLink that enables operators to look up their CEU amounts online without having to call us. To get to this report, navigate to <http://WaterLink.utah.gov> and click



on the **PUBLIC** tab. Then, click **Certification Report (CEU and Course details)**. Alternatively, you can type in this URL:

<https://waterlink.utah.gov/deqWater/secure/operator/operatorSearchMain.html>

## Legionella Workgroup

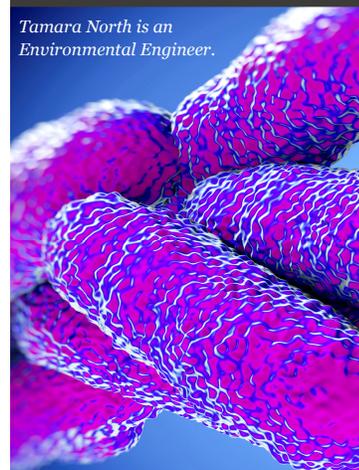
by Tamara North

Recent Legionella outbreaks in New York and other places in the United States have brought greater attention to this water borne disease.

Legionella is a bacterium that can cause mild respiratory illness or pneumonia for people who breathe in water mist or vapors that have been contaminated with the bacteria. In more serious cases of Legionnaires disease, death can occur.

While outbreaks are somewhat rare, about 20 cases of the disease are reported to the Utah Department of Health each year. In an effort to create greater awareness and prevention of this disease, the Division of Drinking Water recently organized a workgroup of concerned stakeholders. This workgroup is currently working to prepare information documents on the disease and prevention strategies. They are also planning to hold a free training for water systems operator and building owners and operators in the fall. Watch for more information to come on upcoming trainings. 🧊

Tamara North is an Environmental Engineer.



## A History of Utah's Certification Program

by Kim Dyches

Utah's water certification program has been approved by the United States Environmental Protection Agency. This is a brief history of Utah's program.

In the beginning there was a voluntary Board that was established in 1965. The first exam was given on February 8, 1966 at the University of Utah and the program was strictly voluntary. The exams were less than 50 questions and various types of questions were used such as multiple-choice, true or false, fill in the blanks, and describe or define terms. The voluntary program gained acceptance mainly by the larger utilities along the Wasatch front. Those utilities gave operators raises, preferential hiring, and set certification as a measure of professionalism.

In 1979 the Utah Legislature approved the Utah Safe Drinking Water Act. This Act provided for a Safe Drinking Water Committee to be appointed by the Governor with the consent of the Senate to adopt and enforce rules. The committee was composed of representatives from municipal government, water districts, industry professional engineers, water research, and the public. This committee formed the first Utah Safe Drinking Water Regulation in November of 1979. Those regulations, with

very few exceptions, were and remain identical to the federal drinking water standards.

In the late 1970's to early 1980's the Bureau of Public Water Systems began accurate compliance tracking. From this tracking it was noted that those systems that had certified operators also had better compliance records. This was due largely to the training, networking, and increased professionalism that was gained from operator certification.

In mid-1981 the Safe Drinking Water Committee noted that a lot of mistakes were being made by people operating public water supplies. It was thought that certification or licensing could help solve this problem. Licensing or certification is a means to help protect the public from those who don't care

**Compliance tracking, introduced around 1980, showed that systems that had certified operators also had better compliance records.**

or use poor practices to operate a public water system. In August 1981 a workshop was held at Utah State University to discuss the required certification program. Eighty water utility officials attended and voiced their concerns. By September 1981 fifteen other States' certification plans were reviewed and a draft document was prepared. This document went through seven revisions by April 1982. Legislation authorizing required certification was pre-filed in November 1982. By 1983 over 775 water and wastewater operators were certified in the State of Utah.

In March 1983, Senate Bill 5 passed, authorizing mandatory operator certification for Community systems serving more than 800 people.

In 1984 the rules were adopted and the Drinking Water Certification program became mandatory. Those operators who had certified voluntarily retained their certification status. Grandfather status was given to those operators that had 7 years of experience and good system compliance. At this time anyone could take the exam whether or not they had any training. A table was developed with the certification rules indicating minimum required qualifications needed for each grade level. Operators that did not meet those qualifications were given Restricted status until they met the qualifications. After passing the exam, training was required to maintain certification. This requirement helped operators keep up on new technologies and current with new regulations.

In 1987 the Utah Exam Question Bank was developed. Until that time the Voluntary Board used the Association of Boards of Certification (ABC) exams. During the time the ABC exams were used, there were complaints that some of the questions didn't apply to Utah. As a result, scores had to be reviewed and modified. In 1988 the new questions in the Utah Exam Question Bank were used on the exams. The exams had training questions that were specific to Utah

...continued on page 15

## NEW DIVISION STAFF

*Dawnie Jacobo*

I joined the Rural Water Association and the Division of Drinking Water staff in June 2014 providing clerical support. I enjoyed working closely with Margaret Hand assisting with the operator certification program. In January 2016, after Margaret retired, I became the new Environmental Program Coordinator for the Field Services section and specialize in operator certification. I am also a certified small system distribution water specialist and certified in incident command. I enjoy snowboarding, hiking, and being with my family. 🏔️

*If you need assistance with operator certification or training, please contact me at [dmjacobo@utah.gov](mailto:dmjacobo@utah.gov) or 801-536-4217.*



# Round 2 of the LT2 ESWTR Source Water Crypto/E.coli Sampling Requirement

by Mark Hansen

Some of the requirements for Public Water Systems for Round 2 of the LT2 Enhance Surface Water Treatment Rule began Jan.1, 2015. Those systems that are subject to this rule are those who use surface water or ground water sources that are under the direct influence of surface water (UDI). Filtered systems that provide and maintain at least a 5.5 log of treatment for Cryptosporidium or plan to install this level of treatment are not required to conduct source water monitoring.

The Schedule 1 & 2 systems, which are those serving populations of 50,000 or more people or wholesale systems that are part of a combined distribution system in which the largest system serves 50,000 or more population, have submitted their sampling plans and have begun their Crypto, E.coli and Turb. monitoring and reporting. The Schedule 3 systems (serving a population of 10,000 to 49,999) are up next with this rule, and their Sample Plans must be submitted by July 1, of this year. The requirements for the Sampling Plan include the following:

1. Select an EPA Accredited lab for Cryptosporidium Analysis in Drinking Waters.
2. Submit an official letterhead of the lab you selected – a one-page summary of the dates when the samples will be col-

lected.

3. Submit a schematic indicating the chemical feed application points along with an arrow indicating the exact sample location. A FPPE report schematic with a hand-drawn arrow is acceptable.
4. Submit a completed cryptosporidium sampling location Worksheet
5. Must include a signature of the responsible official for the water system acknowledging that water system staff would notify the Division of Drinking Water immediately upon discover of any issues related to timely Cryptosporidium sample collection or accurate lab analysis of samples.

Note: EPA does allow a system to use previously grandfathered data for Round 2, as was the case for Round 1.

The **Schedule 3** systems must begin monitoring in Oct. of this year (2016).

The requirements for Schedule 1-3 systems for Round 2 also include sampling for Cryptosporidium, E.coli and Turbidity on a monthly basis for 24 months according to the Sample Plan with only a 2 day allowance, before or after the schedule date.

Schedule 4 systems (pop. less than 10,000) can sample for E.coli in lieu of Crypto monitoring. Their Sample Plan must be submitted by July 1 of 2017, and sampling must begin in October of 2017. These systems are required to sample for E.coli on a bi-weekly basis for 12 months. Training for these systems will take place at the Utah Water Quality Alliance meet-

ings beginning in Jan. of next year as well as in the Rural Water Association of Utah workshops.

The data turnaround requirement is:

Under the LT2 Rule, PWSs are required to submit data no later than 10 days after the end of the first month following the month when the sample is collected (this is approximately 40 to 70 days after sample collection, depending on when during the month the sample is collected ) [40 CFR § 141.706(a)]. For example, if a sample is collected on March 17, data must be submitted no later than May 10.

After the collection of the cryptosporidium and e.coli data, water systems must calculate an average Cryptosporidium and/or E.coli concentration, and use those results to determine if their source is vulnerable to contamination and may require additional treatment, depending on the results of the monitoring. The results will then determine which Bin, (Bins1-4) that systems falls in and will determine if additional treatment is required. For more Information regarding these requirements please refer to the following website:

<http://water.epa.gov/lawsregs/rulesregs/sdwa/lt2/index.cfm>

Also feel free to contact me regarding questions at **801-536-4205** or e-mail at: [mehansen@utah.gov](mailto:mehansen@utah.gov) 📧

*Mark Hansen is the Surface Water Treatment Rule Manager.*

# Energy Savings Strategy Plan

Continued from page 10

## Understanding the Bills

Reading bills can feel quite complicated. In order to have a good and basic understanding of the bill, it is best to look for a couple of key things. These things are the *Demand Charge* (power related), *Facilities Charge* (also power related), and *Energy Charge*. Table 1 is an example of line items from an actual bill sent to a water system in Utah.

Looking at Table 1, there are several charges here that really stand out. First, notice that the demand charge is over two-thirds of the total bill. Together with the facilities charge, they make up about 86 percent of the total bill. Remember that the power is just based on the max power used during the billing period, even if it was only used for a couple of minutes. This would indicate that there

might be room for improvement in the system. The total energy used that part of the bill only 2 percent. This bill comes from a smaller water system that isn't on all the time, so it should be acknowledged that energy can typically be up to 50% or more of the total bill. As far as this water system is concerned, the focus should be on reducing the power related items on their system. It should also be noted that the late payment charge could have been easily avoided too, as these costs can add up over time if bills are not always paid on time. There is no good reason for paying late, ever!

It is also important to just have an understanding about how much power is being used and where it is being used. If you

Table 1 – Line items from a power bill sent to a water system.

New Charges	Units	Cost Per Unit	Charge
Basic Charge			54.00
Demand Charge	60 kw	14.2700000	856.20
Facilities Charge	60 kw	4.0400000	242.4
Energy Charge	593 kwh	0.0384040	22.77
Renewable Energy Adjustment		0.0043000	3.78
Energy Balancing Account		0.0269000	23.64
Customer Efficiency Services		0.0368000	42.28
Home Electric Lifeline Program			7.57
Late Payment Charge		0.0100000	12.63
<b>Total New Charges</b>			<b>1,265.27</b>

as an engineer or water operator know what parts of your system may be using too much power or energy, some design or analysis by a professional engineer may be necessary to reduce the usage or cost.

*Stephen Duncan is a Drinking Water Intern.*



### 1. Identify and replace plumbing fixtures containing lead.

Brass faucets, fittings, and valves, including those advertised as “lead-free,” may contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, with up to 8% lead to be labeled as “lead free.” Visit the NSF Web site at [www.nsf.org](http://www.nsf.org) to learn more about lead-containing plumbing fixtures.

### 2. Look for alternative sources or treatment of water.

You may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at **800-NSF-8010** or [www.nsf.org](http://www.nsf.org) for information on performance standards for water filters.

### 3. Get your child's blood tested.

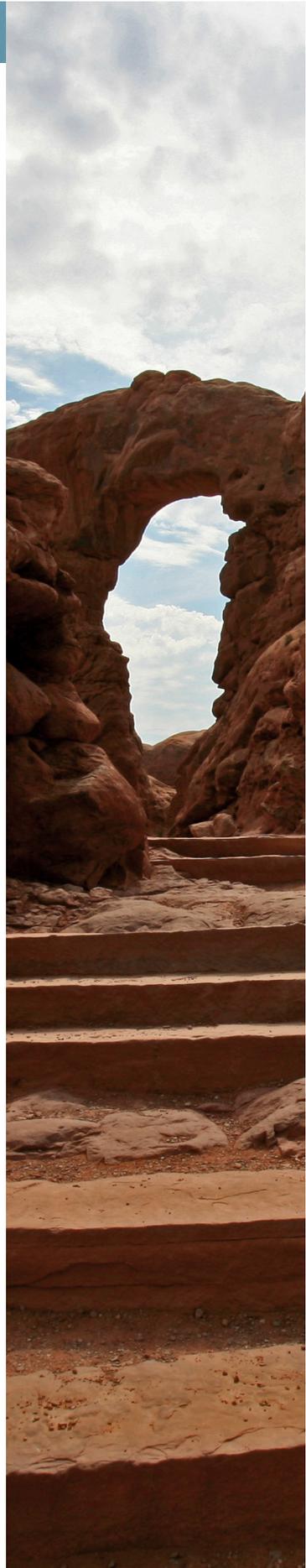
Contact your local health department or healthcare provider to find out how you can get your child tested for lead, if you are concerned about exposure.

DDW staff is here to provide you with information on lead and copper in drinking water. Please contact us or refer to the DDW website for a full list of FAQ's, lab and testing information, and summary of all community systems' 90<sup>th</sup> percentile results.

### IMPORTANT NOTE:

The Utah Division of Drinking Water will now be enforcing Rule R309-210-6(8)(a)(iii). After the addition of a new source or a long-term change in treatment, the water system will be returned to six-month monitoring for lead and copper. If the system meets the lead and copper action levels for two consecutive six-month monitoring periods, then the system will be deemed to have optimized corrosion control and will be moved to reduced monitoring.

*Patti Fauver is the Rules Program Manager.*



copper testing as well as sampling procedures can be found at [drinkingwater.utah.gov](http://drinkingwater.utah.gov)

If the lead sample is over the action level of 0.015 mg/L, then please follow the recommendations:

# The Division of Drinking Water



## REECHes Out by Colt Smith

The Division of Drinking Water is always trying to better communicate with systems and operators. Employees drive all over the state to train in person. WaterLink provides current monitoring and compliance information to water systems. The DDW website currently hosts online trainings on monitoring and water system operation. Our newest communication tool seeks to further bridge the communication gap between system and regulators.

In 2016, DDW will roll out **Reminder Emails Electronic Calls and Hints** or REECH. REECH is an alert system that notifies operators of much of the regular communications from DDW, like certification renewals, upcoming trainings, or the next required sampling. Other states that have used similar tools have seen a significant reduction in missed samples. This means fewer violations and safer drinking water.

REECH works similarly to the attendance alert system already employed by many school districts in the state. It starts by looking at the DDW Database and seeing what samples are due for a system. It will

then remind a system of those samples due. For example, if in 2016 Lead and Copper samples are due at the start of the sample period REECH initiates emails, phone calls and text messages reminding the system and operator. In the months following,

### Reminder Emails Electronic Calls & Hints

REECH will continue to send reminders until samples are received.

With the Revised Total Coliform Rule, seasonal systems need to notify DDW of their start-up procedures. REECH will send reminders to seasonal systems giving them enough time to comply before a violation is issued.

Beyond compliance, it is expected that REECH will notify operators to submit op-cert renewals and alert operators of trainings in their area. In an emergency, REECH may assist in providing information to the public. If a system has current contact information, we will be able to assist in notifying customers if they need to boil water and where they may find more information.

### UPDATING YOUR CONTACT INFO

In order for REECH to best remind and alert your system you will need to update your contact information. There is a form available on The Division of Drinking Water website. When you first open this form you will see two options

under the question "Who are you?"

**Certified Operator:** Select this option to update your personal contact information. This will be used to contact you about trainings and information pertaining to your specific certification.

**Water System:** This is for the water system as a whole. It is what DDW refers to as the Legal and Administrative Contacts. This whoever official mail from the Division goes to. It can be a community's mayor, council person or water master.

**Operator:** This is for an operator who is not certified, but runs a transient water system. In most cases this person is also the Administrative Contact, but in instances where it differs use this option.

### To access the form go to:

[www.drinkingwater.utah.gov](http://www.drinkingwater.utah.gov)

- Select **FORMS** from the left hand menu.
- Scroll to **FIELD SERVICES**.
- Select **Update Contact Info Form**.
- Follow the online prompts to update your contact information. Communication better enables the Division of Drinking Water to provide more accurate oversight by ensuring the violations issued are valid. Reminders of needed samples will help systems to stay compliant and continue providing safe water to their customers. If you have any questions please contact the Utah Division of Drinking Water at **(801) 536-4200**.

*Colt Smith is an Environmental Scientist in the Rules section.*

## A History of Utah's Certification Program

Continued from page 11

water systems. The program and exam structure was similar to ABC. Reciprocity was given straight across with most States and some States downgraded the certification one grade level.

In 1993 the Surface Water Treatment Rule was put into place which required all surface water treatment facilities to have competent operators. Utah used the certification program to establish competency.

In 1996 the Re-authorization of the Safe Drinking Water Act required all Community and Non-Transient Non-Community water systems to have a certified operator. This takes us to February 1, 2001 when the rule went into

effect. The rule requires those systems that weren't required to have a certified operator to obtain one by February 1, 2003 either through examination, grand parenting, or hiring an operator who is already certified. This program helped bring competent and well trained operators to the various water systems throughout the State into the new millennium.

Currently Utah has issued 2781 certificates (some are dual certified) and has 2329 operators. When I began working for the Division of Drinking Water in 1997 we had approximately 1200 operators. We have implemented online exams which gives operators the option of testing and receiving their test results immediately once they've finished taking the exam. They can also get a temporary certificate after they've passed the exam. We are slowly moving to online everything. In the near future

be looking for online entering of CEU's which will allow the credits to be processed immediately. Also be looking for online renewals of your certification which will also be processed immediately once the information is approved. You can now access your CEU's Live at <https://waterlink.utah.gov/deqWater/public/ceuReport.html>. You can also access it from our website at <https://waterlink.utah.gov/deqWater/> and click the Public tab at the top of the page. You can access many other items of information from that page.

We are committed to continuously improving the services that we provide for you. 🍷

*Kim Dyches is the Field Services Program Manager.*



## Alvin Bartley Simons

On April 22, 2016 Alvin Bartley Simons passed away unexpectedly from a heart attack at the age 59. Bart was a member of the Utah Water Operator Certification

Commission and had diligently served on the Commission since January 1, 1995. Bart represented the League of Cities and Towns on the Commission. Bart was the Provo City Water Director and Deputy Public Works Director. His devotion to the water industry was recognized when he received the George Warren Fuller Award in 2012 from the American Water Works Association. Bart was heavily involved with American Backflow Prevention Association in teaching Cross Connection Control to numerous technicians around the State of Utah. Bart was a friend and mentor to all who knew and worked with him. He will be greatly missed. 🍷



## NEW DIVISION STAFF

*Sitara Federico*

*Sitara Federico is an Environmental Program Coordinator in the Rules section! If you need to reach her, try email, [sfederico@utah.gov](mailto:sfederico@utah.gov), or phone, 801.536.4195.*

My name is Sitara Federico and I am an Environmental Program Coordinator. I started in November of 2015 working for Rural Water and the Division of Drinking Water. I grew up in the Vegas area and in Chesapeake, Virginia. I received my Associates Degree through Utah State University in May of 2015 and I am currently working towards my bachelor's degree in Business Administration through Utah State University online, hoping to graduate in spring 2018. I have loved working for the division the past few months and getting to know the staff. 🌱



# Disinfection Byproducts Rule Compliance

by Brad Holdaway

**T**he purpose of the Stage 2 DBP regulation is to improve public health protection by reducing exposure to disinfection byproducts, which have been shown to cause cancer and reproductive effects in lab animals.

The DBPRs apply to all sizes of community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) that add a disinfectant other than ultraviolet (UV) light, or deliver disinfected water, and transient non-community water systems (TNCWSs) that add chlorine dioxide.

In Utah we are blessed to have many high quality surface and ground water sources. Usually, these sources are low in total organic carbon (TOC) and don't form high DBPs when combined with chlorine.

This regulation has been very successful in identifying systems with high DBPs and most systems have been proactive in reducing them.

### Kinks to Consider

**Proper Sample Labeling** One problem with this rule is that samples must be labeled differently. They cannot just be labeled "DS001" for distribution system but need to have specific sample locations which are designat-

ed as either MRO01 (maximum retention in distribution system) or MDO01 (midpoint in distribution system) and these need to be tied to specific addresses. If you are a system with only one sample then it will be MRO01 and we need the address. It's critical to get your sample locations correct or you may not get credit for your sample, which could lead to an erroneous violation. Please check your sample locations in WaterLink and make sure they are correct. If not please contact me with the correct information.

*This regulation has been very successful in identifying systems with high DBPs*

### When do I Sample?

Unless quarterly sampling is required, DBP samples are always taken during the third quarter, July 1st through September 30th. If they are taken outside of this period it is considered a violation.

**OELs?** The DBP rule requires you to comply with maximum contaminant levels (MCLs = 80 ppb for THMs and 60 ppb for HAA5s) to perform operational evaluation levels (OELs) for DBPs. To calculate the OEL at a sample location, take the current value for THM or HAA5 and multiply it by 2. Now add that value to the values for the two previous quarterly samples. Now divide this number by 4, this is your OEL. If it's low you are on track for reduced monitoring, if it's at or above the MCL you need to take action to reduce your DBPs, and you need to notify the division.

**Quarterly Chlorine Reports** This rule requires your chlorine residual to be at least 0.2 ppm before the first connec-

tion, maintain a detectable residual throughout your distribution system and does not allow you to exceed 4 ppm for maximum residual disinfection levels (MRDL). Chlorine report templates for both surface water and ground water systems can be found on the Division web site [drinking-water.utah.gov](http://drinking-water.utah.gov) under Forms, under the Disinfection Byproduct Section. Reports are due before the 10th day following the month or quarter, depending if you are surface water or ground water.

**Reduced Monitoring** Several systems have qualified for reduced monitoring. If your locational running annual average (LRAA) for each sample site in your system is consistently below 40 and 30 ppb, respectively, for THMs and HAA5s then you can qualify for reduced monitoring. Please contact the division if your system has qualified. These results along with operational data (volumes of water treated and disinfectant used, etc.) are reported to the Division of Drinking Water quarterly.

### Work Shops

The Division will be hosting several workshops in conjunction with Rural Water beginning in July around the state. Come in for a system check-up, to see where you stand with DBPs and other pertinent regulations.

*Brad Holdaway is an Environmental Engineer.*

# DDW Capacity Development Program

By Nagendra Dev & Michael Grange

Utah's Capacity Development Program is defined in Division of Drinking Water (DDW) Rule R309-800. A Capacity Assessment Review is required for all new community or non-transient, non-community water systems in Utah as well as for water systems requesting financial assistance through the Drinking Water State Revolving Fund (DWSRF) financial assistance program. The Capacity Development Program has played a vital role in helping Utah's public drinking water systems come into compliance with the Federal Safe Drinking Water Act.

## Requirement

The program applies to both Community Water Systems (those with at least 15 service connections or which serve an average of 25 individuals daily for at least 60 days out of the year) and Non Transient, Non-Community Water Systems (those that serve at least 25 of the same nonresident persons per day for more than six months per year).

Each proposed, new water system must demonstrate that it has adequate technical, managerial, and financial capacity before it may provide water for human consumption. The proposed system must prepare a capacity assessment business plan. The business plan is made up of a facilities plan, a management plan, and a financial plan. The facilities plan details the materials and types of infrastructure that will make up the water system. The management plan explains the

corporate and/or political structure of the water system and how the water system will be operated. The financial plan provides an outline of expected revenues and expenses for day-to-day system operations. The business plan is intended to convey the overall viability of the proposed water system to Division of Drinking Water staff.

Existing water systems, including those newly identified by the Division, must also show technical, managerial, and financial capacity. In these cases system viability is determined through answers provided on capacity assessment worksheets, including a budget forecast spreadsheet, developed by the Division. Water systems applying for financial assistance through the DWSRF program must also demonstrate adequate technical, managerial, and financial capacity to the Drinking Water Board as part of the application and authorization process. SRF applicants use the same capacity assessment worksheets described above.

## Process

All capacity assessment submittals must include - Project Notification Form (PNF), short description of project (include details in the Business Plan), General Capacity Development Worksheets, Financial Worksheets, any other relevant documents such as design drawings, source, storage and treatment calculations, and a system map of drinking water system facilities (storage tanks, pump facilities, springs, wells, booster stations, pipeline, PRVs, vaults, fire hydrants etc). The review of these engineering drawings and specifications will be completed by Environmental Engineers in the Engineering Section or Construction Assistance Section

according to procedures established in Rule R309-500 through 550. Water system monitoring and reporting requirements are the responsibility of the Compliance/Rules Section as outlined by Rule R309-200 through 225 and R309-400 and 405.

To facilitate water system's understanding of the engineering and monitoring and reporting requirements associated with operating and maintaining a public drinking water system the Division has developed a "Welcome to the Club Letter" (WTTC). This letter is sent to each public water system when that system reaches the regulatory threshold and becomes subject to regulation by the Division. The information provided to the water

system in the WTTC letter is invaluable as the system moves forward as a water provider.

The Capacity Development Program, in conjunction with other programs within DDW, works to develop better knowledge and understanding of water system operation for both management and operations staff. The program strives to help water system personnel become successful in managing and operating the system, using technical, managerial and financial measures to identify where staff is currently as well as establishing plans for improvement. As knowledge and capabilities improve our public water system personnel are better able to operate a viable water system assuring many years of providing a safe and reliable source of drinking water to the public at large.

*Nagendra Dev is an Environmental Engineer, and Michael Grange is the Construction Assistance Manager.*

**The Capacity Development Program... works to develop better knowledge and understanding of water system operation for both management and operations staff.**

## Pre-Certification Training Available Online

We have everything you need to pass an exam on our website. This includes various presentations, study guides, Math conversions and formulas, the Utah Operator Certification Rule (R309-300), a list of books, and screencast videos and quizzes.

This can be found at:

<http://www.deq.utah.gov/certification/certification/drinkingwater/certifiedoperators.htm>

If you have any questions, please feel free to contact the operator certification program staff at **801-536-4200** or email Dawnie at [dmjacob@utah.gov](mailto:dmjacob@utah.gov).



## NEW DIVISION STAFF

*Diedre Beck*

*Deidre Beck is the new Environmental Scientist for the Source Protection section! If you need to reach her, try email, dbeck@utah.gov, or phone, 801.536.4201.*

I joined the Division of Drinking Water (DDW) in April 2016 as the newest member of the Source Protection team. For the last 15 years, I worked for Stantec Consulting as a hydrogeologist and Geographic Information Systems (GIS) Analyst responsible for new groundwater source development. I am excited to apply the skills I have developed in my new position at the DDW. I grew up in Davis County, Utah, but transplanted to Salt Lake City after attending Weber State University for my B.S. in Environmental Geosciences. Early on in my career, I discovered a love for GIS and completed several years of graduate coursework in Geography at the University of Utah. I have two very active boys ages 3 and 8, who keep my husband and I extremely busy. When I am not at work or chasing after my boys, I read voluminously and enjoy creative writing, traveling, volunteering at my sons' school, and spending time with extended family. 🌊



**A**fter 15 years, the 2015 Water Quality Technology Conference (WQTC), a prime conference for drinking water quality professionals, came back to Salt Lake City. And it came with a bang!

This conference was organized by the American Water Works Association and held at the Grand America Hotel in Salt Lake City on November 15-18, 2015.

Among over a thousand participants, there were 188 attendees from Utah, which set a record high for local participation (historically, only a handful speakers and attendees are lucky participants of WQTCs). The WQTC is an intense conference, known for high quality of technical presentations, arranged in seven concurrent tracks over three days. Utah was well represented at technical sessions, with 19 presentations given by local speakers.

The opening general session was initiated by a dance, performed by a group of young Ute artists and included a welcome from Gene Koontz,

AWWA President, and a keynote speech by Dr. Mac McKee, director of the Utah Water Research Laboratory in Logan. An all day workshop on harmful algae, held at the Utah Public Health Lab, attracted many attendees, who praised the organization, presentations, and enjoyed hands-on experience and depth of learning.

Another success story came from the organization of the technical tours, offered as pre- and post-conference events. This year, all four technical sessions combined technical aspects with sightseeing and fun. These tours took participants to Alta and Snowbird (including a tram ride), Kennecott reverse osmosis plant (and the copper mine!), newly upgraded plant in Orem (as well as a scenic drive to Sundance, and the Point of the Mountain plant, where participants could walk through a plant with no water in it!

The Conference organizers have received several positive comments about the Grand America Hotel; its design, elegance of the interiors, lecture rooms and guest rooms, as well as the services provided by the staff and the food catering. The out-of-state and the international visitors were praising the City - its beauty, cleanness, the surroundings, the warmth of its people, and the layout of

shops and restaurants. A networking reception organized by the Local Host and sponsored by local consulting and manufacturing firms and held at the Squatters, turned out to be a special attraction, bringing over 250 attendees to enjoy this social event, food and drinks, and an auction organized to support Water For People.

As Chair of the Local Host Committee for the 2015 WQTC, I would like to thank all the volunteers: the Local Host members, room monitors, and the local booth hosts for the professionalism, effectiveness, and for the extra "touch" in assisting us with the Conference. This Conference was rated by many as the best of all of its kind held to date by very many of its attendees, presenters, exhibitors, spouses, as well as the staff of American Water Works Association. The 2015 WQTC left both local and visiting attendees with warm feelings, satisfaction of time well spent, and appreciation for Salt Lake City. Several conference participants wish that they could come back to another conference in Salt Lake City in the near future. 🌊

*Eva Neiminski is an Environmental Engineer.*

# Water Fluoridation & Rule Revision

Continued from page 5

of fluoride overfeed.

We hope the revised rule will provide clarity and specificity in design criteria for future fluoridation facilities (or retrofitting existing fluoridation facilities), regardless whether the facility uses the acid injection, saturator, or dry feed method of fluoridation. We also hope the revised rule will inspire water systems to review the design and configuration of their existing fluoridation facilities and to consider possible improvements to better protect the health of the public and the operators.

We anticipate having a preliminary draft ready for external stakeholders' review by the end of September 2016. We intend to incorporate the feedback before initiating the formal rulemaking process possibly in November of 2016.

## Key Issues of Fluoridation Facility Design

Each fluoridation facility should be designed and operated in a manner that

prevents fluoride overfeed and ensures operator safety. The list below summarizes some key issues in the proposed draft.

- a. The design of the fluoridation facility should include the equipment the water operators need to monitor and control the fluoride level reliably, accurately and in a safe manner. For example, the design must include the means to monitor the water flow treated, the amount of fluoride added, the final fluoride level in the water, etc.
- b. The final fluoride level in drinking water needs to comply with the optimal fluoride level set by local health department.
- c. Fluoride dosing must be flow-paced based on the measured flow into which the fluoride is being added. The fluoride feed pump must have dependable automatic operation with a reliable stopping and starting mechanism to prevent fluoride overfeed if the well or the service pump is not in operation.
- d. A secondary control mechanism for fluoride feed must be provided as backup protection. Secondary control

mechanisms may be a day tank (a small tank to limit the quantity of chemical), a level sensor tied to SCADA, water operator onsite available for immediate action, etc.

- e. Appropriate personal protection equipment (PPE) must be available onsite for operator use. For example, a fluorosilicic acid injection facility must have available full-face shield, safety goggles, and acid-resistant gloves and aprons; while a fluoride saturator facility must have respiratory protection equipment.
- f. For the fluorosilicic acid storage and injection sites, both the design and the operation should consider how to safely handle acid spills and catastrophic failure of the solution tanks.
- g. Bulk tanks and day tanks should have a means to monitor liquid level or solution quantity in the tank.

*Negendra Dev and Ying-Ying Macauley are Environmental Engineers, and Ying-Ying is the Engineering Program Manager*

## EYE ON IT

### Update Your Contact Info

If you are a water operator or water system, help us reach you! Have you moved recently, gotten a new phone number, or changed your name to Mr. Potato Head? You can now enter any new contact info easily in our online form at:

<http://goo.gl/forms/Dy5OPqsR2r>

You can also find this form by going to [drinkingwater.utah.gov](http://drinkingwater.utah.gov) and clicking **Forms** on the right hand column, then navigating down to the **Field Services** section in the middle of the page. There will be a link that says **Update Contact Info Form** that will take you right to the form.

Now, important emails won't bounce back to us, and your old house's new tenants won't see if you failed your recent exam.



# WATER OPERATOR CERTIFICATION EXAMS

## 10 years of STATISTICS

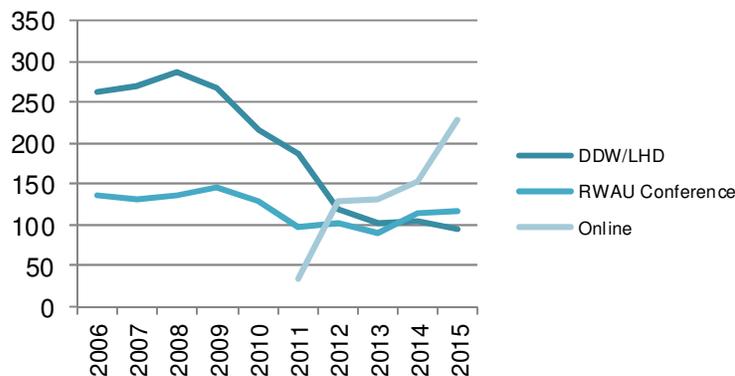


In the past *10 years*

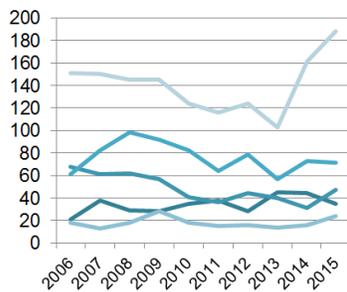
over **3,700** water

operator certification exams have been given. Written exams are in the **SPRING** and **FALL**, and have *decreased* since online exams have become available.

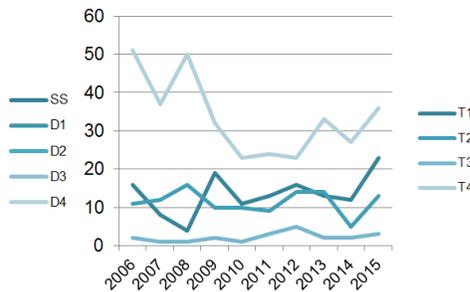
### Exams Given Annually



### Number of Distribution Exams



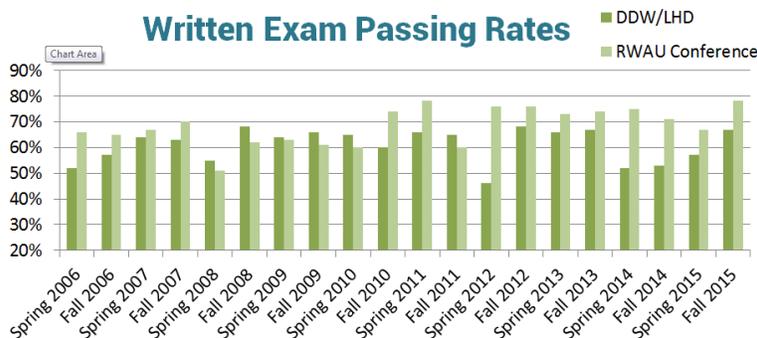
### Number of Treatment Exams



Majority of the exams are *Distribution Grade IV*. From **2006** to **2015** there have been of **3,174** distribution and **607** treatment exams.

The *Rural Water Association of Utah* (RWAU) conferences offer water operator pre-certification **training before the exam**, resulting in **higher pass rates**.

### Written Exam Passing Rates







**M**any people may not be aware of a vast resource of knowledge available to the public in the form our Division of Drinking Water Lending Library.

There are tons of books, DVDs, and software available to anyone wanting to study for an exam, clarify an elusive point of recent confusion about something that has come up working at your water system, or even to while away those afternoon hours with some heavy reading of

*Water Treatment Plan Operation, Vol. II.*

We have many very helpful books in the library here. Those listed on the right page are like the industry standard and the green starred titles are most often recommended by Kim, our Field Services program manager. If you are a certified water operator/specialist we can mail you books to borrow, and if not, call us, email us, or come in any time to check stuff out. Call us at **801-536-4200**, email **D’yani** at **dyaniwood@utah.gov**, or come in any time during business hours. 📖

# Division of Drinking Water Lending Library

Make use of this invaluable resource. Go to [DDWUT.librarika.com](http://DDWUT.librarika.com) to see what books we have for you, then call, come in, or email us any time!



## New Commission Member **Mike Carlson**

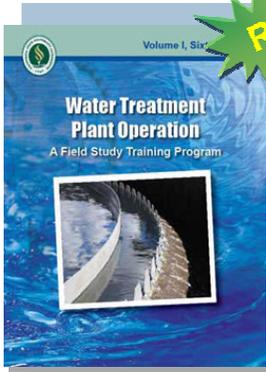
**F**or 32 years Mike Carlson has been chasing water leaks and delivering clean water to the citizens of Centerville City. He has worked for Centerville for 34 years and is currently the Deputy Public Works Director and

Water Supervisor. He started out in the Street Department and was only there for a few years before moving to the Water Department where he was the lead water worker. He has helped set up a Water Operator Manual and a PRV Manual for the City as well as an in-depth Water Audit for the City. He has also helped set up the GIS program for the City. He’s a Grade 4 Distribution Operator and a Backflow Technician I. He is currently working on a SCADA manual for Centerville water system. For over 40 years he’s been a member of the Boy Scouts of America, where he was a Scoutmaster for 13 1/2 years. He is also a District Award of Merit and a Silver Beaver recipient. Mike likes working with the youth in his area and has

well over 150 Scouts that he has worked with. Mike also enjoys traveling. He’s gone to Mexico on several service missions with the Mayan Miracle Foundation. He would like to eventually do a water project there. He also likes just hanging out there. On Mike’s bucket list is to travel to Ireland, cruise to Alaska, spend time on a beach in Hawaii, go back to Glacier National Park and Waterton, Canada. Mike has many outdoor activities he enjoys like being in the Uintas, hiking the wave in Arizona, climbing Wheeler Peak at Great Basin National Park, cruising down the Oregon coast and especially watching the sunrise in Yellowstone Park. 📖

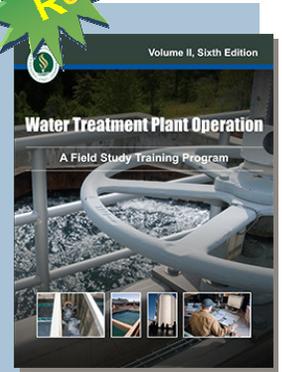
# These popular books are available:

Recommended



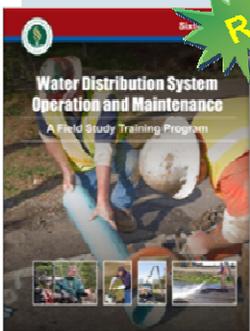
## WATER TREATMENT PLANT OPERATION, VOL. I

Best for beginners. It covers level 1 and level 2 treatment. This book goes very in depth and has practice questions after every section, with answers in the back, along with a breakdown of the math problems.



## WATER TREATMENT PLANT OPERATION, VOL. II

For treatment levels 2 and 4. Covers practical aspects of operating and maintaining water treatment plants, emphasizing safe practices and procedures. Includes study questions and answers.



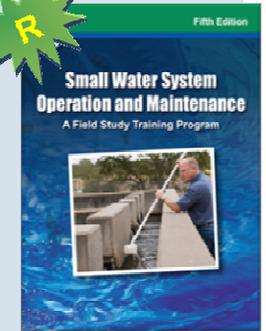
## WATER DISTRIBUTION SYSTEM OPERATION AND MAINTENANCE

Best for distribution levels 1-4. Very thorough. Includes study questions and answers.



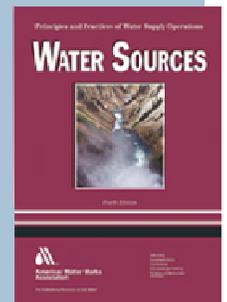
## SMALL WATER SYSTEM OPERATION AND MAINTENANCE

Best for small systems water distribution. Very thorough. Includes study questions and answers.



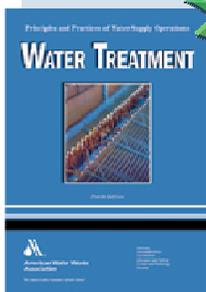
## BASIC SCIENCE CONCEPTS AND APPLICATIONS

Great for reviewing many different topics from mathematics to sciences and hydraulics. Part of the WOS series.



## WATER SOURCES

This water operator training text describes sources of raw water for city potable water supply. Part 1 of the 5-part Principles and Practices of Water Supply Operations (WOS) series.

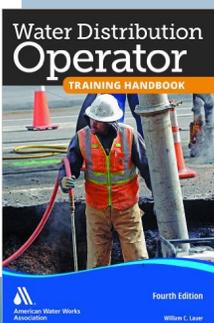
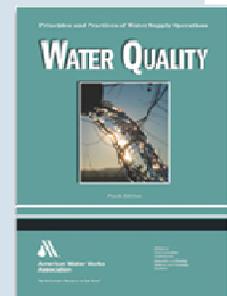


## WATER TREATMENT

Part 2 of the 5-part Principles and Practices of Water Supply Operations series, the book covers all topics of drinking water treatment.

## WATER QUALITY

Part 4 of the 5-part Principles of Water Supply Operations series, this covers the physical properties of water; organic, inorganic, and radiologic contaminants.



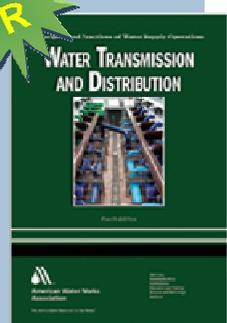
## WATER DISTRIBUTION OPERATOR HANDBOOK

AWWA's most popular handbook for water distribution training. An excellent day-to-day reference and certification study text.



## WATER TRANSMISSION AND DISTRIBUTION

Part 3 of 5, this text is designed to teach students the basic equipment, structures, operation, and maintenance of city water transmission and distribution systems.



# RURAL WATER

## FALL 2016 CONFERENCE

August 29 -  
September 1

Training will be held in the areas of Operator Certification (both water & Wastewater), Water, Wastewater, Management, & Large Systems

- Operator Certification classes will run from **Monday, August 29th - Wednesday, August 31st**, with the test on **Thursday, September 1st**
- Regular Conference classes are on **Tuesday, August 30th** until 3:15 pm and **Wednesday August 31st** until 3 pm
- Final prize drawing will be held at **3 pm** on **Wednesday**

The Backhoe Rodeo will take place in the northeast lot above the conference center on **Tuesday, August 30th (Cash Prizes!)**

Exhibitors will be joining us in the Eclipse Expo room and west lobby on Tuesday, August 30th .

We will again have the **Corn Hole / Bean Bag toss** in the Eclipse Expo on Tuesday and in the main lobby on Wednesday.

There will be a Keynote session during lunch on Tuesday and a closing session featuring the use of Drones on Wednesday afternoon.

We will be holding the Utility Management Certification classes in conjunction with the conference on Tuesday and Wednesday, with a certification testing opportunity held on Wednesday.

# UPCOMING EVENTS

	<p><b>Backflow 101/ Cross Connection Program Implementation/ Compliance Requirements</b></p> <p>June 7, 2016 by RWAU - Rural Water Assoc of Utah (801)756-5123 Tropic Town Hall, Tropic</p>	<p><b>Backflow 101/ Cross Connection Program Implementation/ Compliance Requirements</b></p> <p>June 7, 2016 by RWAU - Rural Water Assoc of Utah (801)756-5123 Tropic Town Hall, Tropic</p>	<p><b>Drought and Waterloss Workshop, St George (.8 CEU'S)</b></p> <p>June 8, 2016 at 8:30 AM by DDW - Division of Drinking Water (801)536-4192 St. George</p>
<p><b>Energy Efficiency / Water System Loss Auditing &amp; Yearly Data Report</b></p> <p>June 14, 2016 by RWAU - Rural Water Assoc of Utah (801)756-5123 Ephraim City Hall, Ephraim</p>	<p><b>CPR/First Aid Certification</b></p> <p>June 14, 2016 at 8:00 AM by RWAU - Rural Water Assoc of Utah (801)756-5123 Pleasantview</p>	<p><b>AWWA Seminar</b></p> <p>July 14, 2016 by DDW - Division of Drinking Water (801)536-4192 Pleasantview</p>	<p><b>AWWA Seminar</b></p> <p>September 22, 2016 by DDW - Division of Drinking Water (801)536-4192 St. George</p>
<p><b>AWWA Seminar</b></p> <p>November 17, 2016 by DDW - Division of Drinking Water (801) 536-4192 Enoch</p>	<p><b>Drinking Water Application Deadline for 2016 Midyear Conference</b></p> <p>August 11, 2016 by RWAU - Rural Water Assoc of Utah (801)756-5123 RWAU Offices, Alpine</p>	<p><b>RWAU Fall Conference</b></p> <p>August 29 - September 1, 2016 at by RWAU - Rural Water Assoc of Utah (801)756-5123 Davis Conference Center, Layton</p>	<p><b>Water Pro Conference</b></p> <p>September 12-14, 2016 by RWAU - Rural Water Assoc of Utah (801)756-5123 Orlando</p>
<p><b>Intermountain Section AWWA Annual Conference</b></p> <p>September 14, 2016 by AWWA - American Water Works Association (801)712-1619 Dixie Center - St. George, St. George</p>	<p><b>DDW - Water Operator Certification Exam Application Deadline for 16 Utah locations</b></p> <p>October 20, 2016 at 5:00 PM by DDW - Division of Drinking Water (801)536-4200 Division of Drinking Water, Salt Lake City</p>	<p><b>DDW - Water Operator Certification Exam - 16 Utah locations</b></p> <p>November 10, 2016 by DDW - Division of Drinking Water (801)536-4200</p>	<p><b>Special CEU Sale</b></p> <p>December 6, 2016 by DDW - Division of Drinking Water (801)536-4200 Herriman Fire Station #123</p>

# UPCOMING EXAMS

## ONLINE EXAMS

The online exams are sponsored by the Rural Water Association of Utah. Online exams are available throughout the year by appointment only. You will immediately receive your exam results and a temporary certificate, if you pass. You can also review your exam and see what questions you missed. For more information contact Shantell Cummins at **801-756-5123**

or  
**shantell.cummins@rwau.net.**

Sponsored by: Rural Water  
Application Deadline:

**February 17, 2017**

Exam Date:

**March 3, 2017**

St. George, Utah

Contact:

**801-756-5123 or**

**shantell.cummins@rwau.net**

Sponsored by: Drinking Water

Application Deadline:

**March 23, 2017**

Exam Date:

**April 13, 2017**

16 Utah locations

Contact:

**801-536-4200 or**

**dmjacobo@utah.gov**

Sponsored by: Rural Water

Application Deadline:

**August 11, 2016**

Exam Date:

**September 1, 2016**

Layton City, Utah

Contact:

**801-756-5123 or**

**shantell.cummins@rwau.net**

Sponsored by: Drinking Water

Application Deadline:

**October 20, 2016**

Exam Date:

**November 10, 2016**

16 Utah locations

Contact:

**801-536-4200 or**

**dmjacobo@utah.gov**

Sponsored by: Rural Water

Application Deadline:

**August 17, 2017**

Exam Date:

**August 31, 2017**

Layton City, Utah

Contact:

**801-756-5123 or**

**shantell.cummins@rwau.net**

Sponsored by: Drinking Water

Application Deadline:

**October 19, 2017**

Exam Date:

**November 9, 2017**

Salt Lake City, Utah

Contact:

**801-536-4200 or**

**dmjacobo@utah.gov**

# CROSS CONNECTION

## CERTIFICATION / RE-CERTIFICATION

### Schedule

**BackflowTrainingServices.com**

#### Class II Tester Certification Class:

Aug 8-12, 2016 Sandy, UT

Sep 26-30, 2016 Clearfield, UT

Dec 19-23, 2016 Sandy, UT

#### Class II Tester Re-certification Class:

Aug 10-12, 2016 Sandy, UT

Sep 28-30, 2016 Clearfield, UT

Dec 21-23, 2016 Sandy, UT

**BatandSupply.com**

#### Class II Tester Certification Class:

Aug 22-26, 2016

Oct 3-7, 2016

#### Class II Tester Re-certification Class:

Aug 24-26, 2016

Oct 5-7, 2016

**RWAU.net**

#### Class I Administrator Certification Class:

Nov 28-Dec 1, 2016

Dec 12-15, 2016

#### Class I Administrator Re-certification Class:

Nov 29-Dec 1, 2016

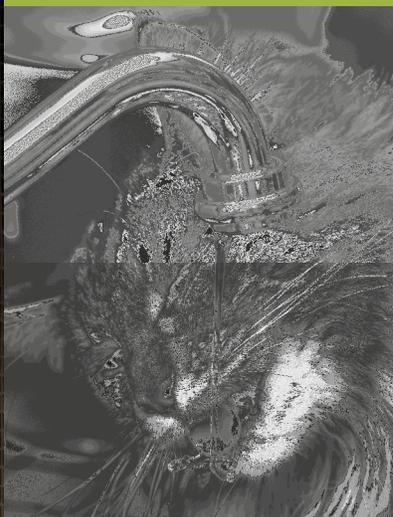
Dec 13-15, 2016

## Submitting CEUs? Applying for an Exam?

Make sure you are using our most current form! Always use the forms from our website. We make them better and update them periodically.

<http://www.deq.utah.gov/forms/water/dw/index.htm>





There are many pros and cons about the Environmental Protection Agency's regulations and whether or not they overreach with those regulations. Drinking water standards are important for our way of life. Because of these standards, many of the diseases from the past are no longer a major concern to us. There are several examples around the country of contaminated water in the past and present and the impact it has had on thousands of lives. A large percentage of those people have died or fallen ill from tainted drinking water. Some of the most recent examples of contaminated water are lead contamination in Washington, D.C. in 2010, a chemical spill which contaminated water in West Virginia in 2014, and most recently the water crisis in Flint, Michigan in 2015. Standards enforced by the United States EPA have saved countless lives over the years and protected the water we drink.

In January of 1973, the Safe Drinking Water Act was introduced. This is a federal law which was introduced to protect drinking water in the United States. The standards set within this law are incredibly effective and are still in full effect today. The EPA ensures the safety of our drinking water through various partnerships which implement technical and financial programs for our protection. Similar to the Safe Drinking Water Act is the Clean Water Act. The Clean Water Act ensures quality

# EPA:

## *Is It Worth The Cost?*

by Callie Dyches

standards for surface water such as lakes and ponds so they are free of pollutants. This is the type of water wild animals tend to drink. It is just as important to have clean surface water as it is to have clean drinking water because if surface water is polluted then animals will become ill and die, and so would humans if we did not have safe drinking water.

The water contamination crisis in Washington, D.C. began in 2004. Lead contamination in their drinking water severely damaged the reputation of the Centers for Disease Control and Prevention. Their failure to properly keep their drinking water safe resulted in thousands of sick citizens, including children, who now suffer lifelong health problems as a result of consuming contaminated water. Charles Ethan, a citizen of Washington, D.C. affected by the water crisis, says his four year old grandson drinks water from his home every time he visits. These individuals drink water from their homes every day, expecting it to be completely safe.

As you can see, if those in charge don't properly monitor the safety of their water, crises such as this can occur. Levels of lead were 83 times the acceptable safety limit, which resulted from the use of chloramine instead of chlorine as a treatment chemical. As of 2010, over fifteen thousand homes were reported to still have dangerous levels of lead in their water. This is just one prime example of how important it is for the

EPA to enforce their standards of safety.

The West Virginia water crisis of 2014 came as a result of a chemical spill which contaminated the water. This occurred because of the chemical facility's careless neglect of above-ground storage tanks. Because of this facility's carelessness and thoughtlessness for the community and the effects their actions can have, the result was thousands of sick and dying individuals within their state.

There are a few accounts of women who had just given birth in hospitals where their newborns unknowingly came in contact with the contaminated water. A baby girl born at the beginning of this crisis was bathed in contaminated water shortly after being born. The baby did not show any immediate health problems from being exposed; however, long term health problems are a possibility for the girl. A woman named Kelly shares her story about giving birth to her daughter and being in recovery when the order not to use the water was issued. It would be

***Levels of Lead [in the Washington D.C. water contamination crisis in 2004] were 83 times the acceptable safety limit.***

very startling to hear your water was unsafe and possibly deadly almost immediately after giving birth. Health risks in small children and animals are much more severe than risks for adults (though risks for adults are still most definitely severe).

Every state in the U.S. is individually responsible to create their own legislation to comply with the EPA's clean water act standards. If a state fails to fulfill EPA standards, that particular state will lose the ability to run their own program. No one involved in this crisis wanted to take responsibility for the neglectful actions which caused such damaging effects. Several executives of the chemical company denied involvement in what happened, but all of them ended up pleading guilty to charges related to the crisis and were sentenced to prison.

One of the most prominent events

currently in the news is the Flint, Michigan water crisis which unfolded in April of 2014. The crisis began when Flint changed their water source from Detroit to the Flint River. The idea of changing the city's water supply was to save money, though Flint used to have the highest quality water in the country.

Citizens began to complain about the taste, color, and overall quality of the drinking water. Rhonda Kelso, a long-time Flint resident, says "We thought it was a joke. People my age and older thought, 'they're not going to do that'." Kelso's young daughter observed the water was now brown. It was brown enough that this family confused it with sewer water, though the brown color in the water was caused by iron, which is highly corrosive. Flint's water was not being treated with an anti-corroding agent like it was supposed to be which led to the change in its color. No one should have to tolerate being told that their filthy water supply is safe to drink and nothing will be done to fix it.

One of the most shocking facts during this crisis was the announcement that General Motors would no longer be using the new water supply, as it was corroding their car parts. This drinking water is supposed to be safe to use, according to state officials, yet it is corroding car parts. The blatant neglect and carelessness of the public's health is appalling. Though state officials were continually told by experts and given sufficient evidence that their water was indeed contaminated and unsafe for people to consume, little to no action was taken to fix the problem.

When action was finally taken from a higher level, the Environmental Protection Agency sent in expert Miguel Del Toral to test the water; he reported that Michigan was testing the water in a way which severely understated the levels of lead within it. Del Toral issued a memo to a state aide stating, "given the very high lead levels found at one home and the preflushing happening in Flint,

I'm worried that the whole town may have much higher lead levels than the compliance results indicated." Unsurprisingly, state officials continued to ignore the fact their water supply was toxic and hired a different company to test their water. Lead level results were not included anywhere within its results.

A recurring theme in these various water contamination crises is the fact no one wants to take responsibility for their actions, or lack of actions. All individuals CNN interviewed about the crisis, including residents, the current/former mayors of Flint, congressmen, and city workers blamed the governor's office and Department of Environmental Quality. Michigan's director of the DEQ, Dan Wyant, tendered his resignation.

Many argue that the Environmental Protection Agency's water quality standards are too strict or costly. Their regulations cost more than 5% of annual gross domestic product. Regulations by the EPA cause inflation of the costs of goods, services, energies, and activities. Many of their regulatory programs conflict with each other or lack consistency. Some claim the government has become so eco-friendly that the EPA is a target for costly frauds such as climategate and the new green economy, which are examples of two past government controversies with questionable ethics behind them. Lisa Jackson, the newly appointed EPA administrator under President Obama, may issue orders such as stricter gasoline standards, rollback of federal subsidies for oil and gas, tax break slashes, as well as royalty waivers for energy industries. Others argue that our country is in a continual state of economic hardship and the last thing we need is more economic regulations to further us into debt.

However, the pros of the Environmental

Protection Agency's strict standards are for our own good. Vehicle and industrial air pollutants are inventoried and controlled as well as hazardous and toxic substances. Agricultural and food pollutants as well as solid wastes and drinking waters are controlled. Sewage, industrial, runoff, and wastewaters are controlled. Oil, mining, coastal, and fishery pollutants are controlled. Cultural, historic, and scenic resources

**General Motors [in Flint, MI] would no longer be using the new water supply, as it was corroding their car parts.**

such as national parks are protected. The EPA is also an active stakeholder in local, state, and federal environmental impact assessments.

It is quite self-explanatory why it is important to control and protect these various resources. Each of these standards and regulations are set to protect not only our drinking water, but also many other resources we use. Without the EPA, regulations adopted by individual states would likely fail and turn into a water contamination crisis that is being neglected while state officials play the blame game.

Neglect, carelessness, and lack of responsibility are a common factor in each of the several water crises which have occurred in the United States. Without the EPA's strict safety standards in place, it is very likely we would see more water contamination and waterborne disease throughout our country.

*Callie Dyches is a student at Salt Lake Community College*

### Math Answers

1.  $12\frac{7}{12}'' = 1\text{ foot}$
1.  $1 \times 1 \times .785 = .785 \text{ ft}$
- $.785 \text{ ft} \times 5280 \text{ ft} = 4144.8 \text{ ft}$
- $4144.8 \text{ ft} \times 7.48 \text{ gallons/ft}^3 = 31003.1 \text{ gallons}$
2.  $\text{HP} = \text{feet} \times \text{gall}/3960$
- $200 \times 500/3960 = 25.25 \text{ HP}$
3.  $2.31 \text{ feet/psi}$  or  $.433 \text{ psi/foot}$
- $50 \times .433 = 21.65 \text{ psi}$  or  $50/2.31 = 21.65$
4.  $.40' \times .40' \times .785 = 1.256 \text{ ft}^2$
- $1.256 \text{ ft}^2 \times 25' = 31,400 \text{ ft}^3$
- $31,400 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 = 234,872 \text{ gallons}$
- $234,872 \text{ gallons}/1,000,000 \text{ MG} = .234872 \text{ MG}$
- $.234872 \times 5 \times 8.34 = 9.79 \text{ lbs}$
- $9.79 \text{ lbs}/.65 = 15.06 \text{ lbs}$

### Math Answers



# WaterLink.utah.gov...

...a Water System's best friend!

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#### Reports:

- Bacterial Summary
- Inventory
- Improvement Priority System (*IPS*)
- Water Monitoring
- System Summary report

#### Public Access:

- Certification Report (*CEU and Course details*)
- Consumer Confidence Report (*CCR*)
- Current Class II and Class III Backflow Technicians
- Current Commercially Available Backflow Testers for the State of Utah
- Engineering All Projects By File Number
- Engineering All Projects By Water System Name

### TOEING THE RENEWAL DEADLINE

Get your renewals in early! They'll get processed faster and you'll avoid the end-of-year rush. Less workload-induced errors on our part, easier time on yours. You can now check your CEU amounts online at:

[https://](https://WaterLink.utah.gov/deqWater/public/ceuReport.html)



[WaterLink.utah.gov/  
deqWater/public/  
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OpenLine Spring 2016

Past issues can be found at <http://www.deq.utah.gov/NewsNotices/newsletters/openline/openline.htm>



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