Wisconsin Rural Water Journal

Spring 2022

Begin With Stewardship

Landfill Leachate Concepts

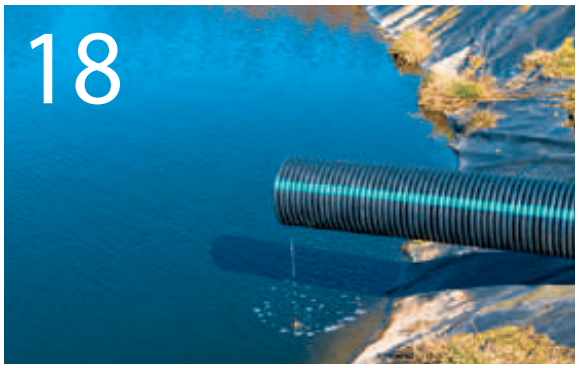
GGA Fixes

Perception

The Meter is Running for Rural Water System

WRWA 2022 Annual Conference

www.wrwa.org



In Every Issue

FEATURES

OFFICIAL PUBLICATION OF THE WISCONSIN RURAL WATER ASSOCIATION

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Address all letters to the editor, advertising inquiries and correspondence to:
Wisconsin Rural Water Association, 350 Water Way, Plover, WI 54467.

Message from the President

Dean Bergstrom,
WRWA President, Cumberland

It looks like the weather is starting to turn into spring here in Wisconsin. I hope everyone endured the cold winter months, although I think it could have been worse. For all who attended the 34th Annual Wisconsin Rural Water Association Technical Conference, I hope you were able to take something you learned back to your utility that will help with your daily activities. There were many great classes and once again, our exhibit hall was one of the largest in the nation with approximately 215 exhibitors. Thank you to all who attended the conference at some point throughout the week and to the vendors that support WRWA. Without you, it would not have been possible. Thank you to Chris Groh and the staff for their hard work throughout the week and for all the planning that led up to the conference. In addition, thank you to the rest of the board for helping out when needed and for keeping WRWA focused on our path moving forward. We held our elections at the convention after the opening ceremony. The incumbents that were up for re-election were re-elected. Thank you to those that joined us for the annual meeting. Now everyone can turn their focus to spring and summer projects. Whether it is flushing hydrants, turning valves, hauling sludge from the treatment plant or a major construction project, please remember if you ever need any help, WRWA circuit riders are here to assist. In addition, we have the loaner equipment if there are specific tools that you may not have at your utility or cannot afford one to use only once a year. Please call your circuit rider and they will be more than happy to help you! I hope you all have a great spring and summer. Until next time, stay safe!

Dean

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WRWA
Wisconsin Rural Water Association

WRWA Mission:
Assisting, educating and representing our members in the Water & Wastewater Industries.

Message from the Executive Director

Chris Groh,
WRWA Executive Director

A New Beginning for Rural Wisconsin

We often equate Spring with a new beginning or fresh start. Sometimes the weather makes us anxious to clean our home, workshop, boat or to prepare for all our upcoming adventures in the coming Summer and Fall. Often times the materials become available to help with these preparations and so does the time to do them. We're not out plowing snow or fixing leaks, and grass hasn't started to grow and the warming that comes in spring has a better affect on our water and wastewater systems. So, we have time to catch up and get ahead of things at work.

In the Rural Water world several things come together that will take us through the rest of the year. A lot of that is funding for our friends at USDA-Rural Development and thus funding for your water/wastewater projects. As I write this, I'm in Washington D.C. to meet the people that help all of us keep bringing funding and technical assistance to you, rural Wisconsin. DC is a large city, but it's full of local people that are helping us to improve and fund all the things that we need to keep supplying our customers with clean water and a clean environment. There are plenty that don't help, but luckily, we have enough support to keep on the good side of that number.

This year Kevin Mraz, our National Board member, Rob Nelson-Mauston, one of our State Board Members and I took the trip to Capitol Hill to meet with our Congressmen and Senators and discuss what's going on in their districts, state and across rural America. These discussions hopefully convince them to continue spending money on their constituents' businesses, health, and ability to afford clean water and a clean environment. We review with our Representatives information that I bring along. I always bring information for them to look at which is usually any significant meetings our water and wastewater circuit riders have done in their district, a list of projects that have been funded by their funding approvals, and most significantly what is going on back home. Sometimes water and wastewater are not the glamorous subjects that makes the news. To be frank, they are almost always very interested when we have this discussion. They mostly really are interested.

This year the conversations will cover lead, PFAs, EPA and all the projects we will need to build to comply with new regulations that are surely coming. We have had a good start with these conversations. In December we had a great conversation with Secretary of Agriculture Tom Vilsack. In February I had the pleasure of a long conversation with Senator Tammy Baldwin, who chairs the Senate Appropriations Committee for Rural Development. We took her on a tour of Chetek's old wastewater treatment plant, and she was extremely interested in what she saw and what the new plant would do for the city. Her help in funding this project will propel the small town of Chetek into and through the 21st century. They will be set for many, many years.

This is what we are out in DC for. We want every rural town in Wisconsin to be able to provide for their people and to not be indebted for a lifetime. With luck, we'll see it come in the near future.

Chris

We get letters and emails!

We'd love to hear from you…

Dear Chris,

As I move forward into the new chapter of life (retirement, Yay!), I would like to thank everyone at Rural Water for all the help they have provided throughout the years. There is no other organization that provides the knowledge and technical skills to small communities like WRWA does. Without your organization the small communities like ours would have a difficult time. All the staff has done a great job providing any assistance needed. Many thanks to Kay and Jeff for all their expertise through the years. They have always answered my questions and provided the needed technical advice, and hands on assistance. You should be proud to have such great people on board. So hats off to you and your great organization!! I know that Rural Water will continue to provide the excellent service for years to come.

Good Luck to you and all your staff in the future!!

Paul Dachel, DPW, Village of Weyerheuser

Hello Chris,

Thank you and the WRWA for this nomination. I am honored and humbled to be nominated with all the great operators we have in this field. I unfortunately will not be able to attend this year's tech conference.

Thank you and the staff at WRWA with all you do for us operators and are truly a lifesaver for this industry. With all the changes and goings of this field it's nice to have experienced individuals like yourselves to help us operators when our backs are against the ropes. Again, thank you so much for the nomination. I am truly honored.

Take care and hopefully I'll see you at the next conference.

Kyle Young, City of Weyauwega

I would like to thank Jeff LaBelle, Kay Curtin, and everyone at WRWA for all the help they have provided our village over the years. Also a big thank you for the use of the equipment we can borrow. It all means alot to a small village like ours.

Robert Sampson, Village of Radisson Public Works

Dear Chris,

The Village of Merrimac would like to express our gratitude for the services that the Wisconsin Rural Water Association (WRWA) continues to provide us as we improve the condition and operation of our Water and Sewer Utilities.

A few months back, WRWA Source Water Specialist Andrew Aslesen stopped by the Village and happened to catch our Utilities staff during their morning rounds. When our DPW mentioned that the Village of Merrimac was in the process of planning for a second water supply well, Andrew indicated that he would be able to draft a Wellhead Protection Plan (WHPP) – for no cost to the Village.

As it happened, we were just in the process of completing the Intent to Apply (ITA) and Priority Evaluation and Ranking Formula (PERF) with DNR to apply to the Safe Drinking Water Loan Program (SDWLP). We had seen that having a WHPP could garner us an extra 5 PERF points towards our project's ranking. After paging through example WHPPs, it looked like way too much for us to tackle on our own, so we dismissed the idea. Imagine our delight when we learned just two days later that WRWA could help us get those points after all.

We met with Andrew on two occasions, first for a kickoff meeting, and then in a meeting with our Steering Committee. We all found Andrew to be very easy to work with. His easy-going nature, coupled with his deep understanding of the process, gave us confidence that his work product would be accurate and help us protect our Well No. 1.

As of today, Andrew has completed our WHPP, which will be submitted to DNR next week. It's an impressive document, well-written with many informative figures. Andrew also provided us with a Draft Wellhead Protection Ordinance, which he talked us through in some detail on his second visit. The Draft Ordinance will now be reviewed by our Plan Commission and Village Board of Trustees for adoption in the next couple of months. Thanks to Andrew, we're on track to get our well better protected... and get those 5 PERF points.

We continue to be pleased with and impressed by the level of service WRWA staff renders small utilities. The service you provide is so valuable, and we hope you'll include this letter among your documentation of satisfied customers!

Phil Budde, President
Brian Mooney, Administrator

Begin With Stewardship

Annetta Von Rueden,
WRWA Water Circuit Rider

As early as the 1950's plastics started finding their way into American households to make life easier as the workforce changed.

I wonder what the world would look like if our Grandparents, or generations before us had had that sentiment or attitude of "Who cares"? What condition would our waters, land, and environment be in?

I often think of how the generations before us could have been years ahead of their times, regarding environmental stewardship and conservation. They were organic farmers and gardeners. There were no heavy chemicals used to raise crops. Crops were cultivated for weed control. Then, in the mid- 1980's, or earlier, cultivators and a lot of simple ways of doing things went by the wayside as these new, convenient farm sprays came along to save time and money making our lives easier. Have they? At what cost? Look at the impact they have had on the waters and land, not to mention our health. Years later, how are we going to reverse this damage? Is it irreversible?

PFAS and PFOS along with 100's of chemicals attached to their chains were developed. These chemicals are water and oil resistant. Used in manufacturing from non-stick cookware, food packaging, water resistant clothing, furniture, adhesives, electrical wire insulation, to fire-fighting foam.

As early as the 1950's plastics started finding their way into American households to make life easier as the workforce changed. Instead of having time to make meals at home, quick and easy convenient meals were developed, ready to be served for dinnertime. Plastic containers and plastic bags came into play, and can be found everywhere. Restaurants wrapped burgers and fries for working families. For the next 50 years grease resistant coating has been applied to food packaging. PFAS and PFOA would find its way into the American diet from buttery popcorn to

burgers and pizza. Now we can buy our family dinners at gas stations for take home.

Scientists have linked PFAS and PFOA to kidney, testicular, liver, thyroid, low birth weights, and suppression of children's immune systems.

Lately, with testing, PFAS and PFOA are being discovered in our drinking water and wastewater biosolids. Municipalities have had to shut down wells with PFAS detections in them.

Sure, there are treatment options. But what is done with the treatment waste? How could this problem have been prevented in the first place?

Habit. The definition of habit is settled or regular tendency or practice, especially one that is hard to give up. Doesn't that sound familiar? We have all experienced that in the last two years. We all know how our habits have had to change. Because we had to. Who would have ever imagined we would all be having to wear masks on our faces everywhere we went? Being confined to our homes, and not being able to go into restaurants and stores.

We need to start treating our basic resources of water and the land with the same mindset. It's a matter of changing our habits. If we don't change our habits soon….is it going to be irreversible?? We see the effect of these habits over many years in the landfills and oceans that are filled with plastic.

A good beginning would be to reduce our dependency on plastic.

Take a look at what you throw into the trash. Can it be re-used or recycled? Dog food, bird seed, lawn seed bags. Throw them away? Or use them as trash bags in the garage? Challenge yourself and your family.

- Fill up a thermos of coffee at home instead of coffee cups at gas stations. It is cheaper.
- Same goes with water. Look at all the plastic bottles eliminated if you take a container or thermos of water from home instead.
- Use glass food storage containers instead of plastic.
- Use the air dryer for your hands instead of using paper towels. If there is no choice, try to use only one paper towel.
- Refrain from taking plastic bags. Especially if there are only a few items. Ask the clerk for a carboard box instead. Get funny looks, but they will come up with one. What is the difference? They recycle them in the cardboard compactor anyway.

We all are familiar with the grocery store chain based out of Europe that does not have plastic bags. You bring your own bags. I was on a gas station the other week, the clerk asked if I wanted a bag. I said "no thank you, I do not take plastic bags." The clerk said "thank you" and told me when he and his wife traveled to Germany this past summer, Germany has outlawed plastic bags, and they had to purchase a wicker basket for their shopping.

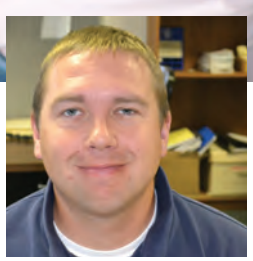
There may be a day when there will be no more plastic bottles or plastic bags. I hope that day comes soon.

Change your habits. We are at a small turning point. We still have a LONG WAY to go. Every little bit counts. Let's be good stewards of the land. Help protect our water and land for future generations.

Stay safe, and keep it local. *Annie*

CORPORATE GOLD MEMBERS

GGA Fixes



Jesse Hass,
WRWA Wastewater Technician/Trainer
Wastewater Specialist

Even though you may find yourself in this predicament one day, just know that these things happen to most every lab at some point.

Quite often Kay or I receive calls from wastewater laboratories that their glucose glutamic acid (GGA) test is not falling in range or their blanks are failing. Even though you may find yourself in this predicament one day, just know that these things happen to most every lab at some point. There are numerous things that can cause these things to happen. Some of the most common causes for samples not falling within range include poor dilution water, seed source, proper cleaning techniques, operator error, faulty probes and a few other things. Trying to pinpoint the actual cause of quality control problems can be an arduous task. The best way to troubleshoot is to change one variable at a time, run tests, and then check the results. So if you have an issue, try to start with the most common areas for possible problems and go from there.

If you are having trouble with your GGA or blanks, try another water source. Run two sets of bottles with samples from your original water source and samples using a different water source. From my travels and experience the most common variable that causes lab tests to fail is bad dilution water. If you are making your own water you may have to buy dilution water from the store to see if your water is the problem. If you are already purchasing water you may have to find another brand to try out. If you are stilling your water and the new source checks out you may have to acid wash your still or replace the heating element or other parts.

Seed source is another issue that pops up often with GGA. The three most common sources of seed are store bought seed, using an effluent grab sample or a raw grab sample. Seed issues can also lead to GGA not falling within range. If you have ruled out your water as the not the problem, then the next area I would focus on is seed. Set up two racks of bottles using two different seed sources. This should help you determine if your seed is working or not. If you are buying seed then try a grab raw sample or if you are grabbing a sample try store bought. Seed is a something that each lab seems to have their own strategy for implementing. Some people incubate their seed, some will aerate, others will let their seed settle and use supernatant, and others will have different strategies. Just remember that just because your seed source has always worked doesn't mean it always will.

Another factor may be keeping your lab and glassware clean and tidy. If you have an issue with blanks or GGA it may be time for a full scale lab cleaning. Sometimes you may have to get the acid out and clean all of your bottles and other glassware used for testing. Blanks and GGA are designed to be tests that let you know if something is wrong with your method. When you have problems sometimes it is as easy as just cleaning every piece of glassware really well. If cleaning your glassware helps remedy the problem, then it may be time to reassess your cleaning routine so that you do not have issues in the future. One last point I will touch on is your probe. The problem could be a calibration error or the probe itself. You may have to replace a membrane or replace the probe if nothing else works. I would do a probe replacement as a last resort, but in some cases replacing the probe is the only thing that will remedy the problem. If you ever run into a lab issue don't hesitate to call Kay or me. We receive calls frequently on trouble shooting lab problems.

Jesse

OTM /NN Water Systems

Hello Everyone,

As spring gets closer and the snow melts up north, I would like to remind operators out there to keep up with their everyday Operation and Maintenance routines. First off, check on your water systems sampling requirements. You don't want to forget doing water samples and falling into non-compliance. You can always utilize the DNR web site to check on your sampling requirements at any time. Tackling and planning for past projects should also be on the table for the New Year. Also, periodic inspections of water storages and service lines should also be conducted. This is important to find any structural problems and correct them before they become serious. I've been called to quite a few systems this past year for leak detection services. Luckily all of the systems I was called on we found the leak and were able to make repairs before it became too serious of an issue. Just make sure you're aware and watch for any potential water system problems and notify management of anything suspicious. Meter reading is a good place to start for suspected leaks. Also keep an eye out for customer reports of low or loss of pressure. This could tip you off too potential problems occurring in the water system. Sometimes it may seem like I repeat myself often on Operation and Maintenance issues, I do this so you can be reminded of things you may have overlooked in your water system. Lastly, make sure you always keep up with Trainings that we at WRWA will be providing for all Operators. You can utilize WRWA website to find the best trainings you may be seeking. We have in-person trainings currently being conducted throughout Wisconsin.

These are just few tips that have always helped me out in the field. Remember you can always contact me or the nearest WRWA WI -Water Circuit Rider or WI -DNR Rep with any technical assistance you may need. We are always happy to assist.

Thanks for reading everyone.

George Taylor,
Small Water System Circuit Rider
715-321-4145 • Gtaylor@wrwa.org

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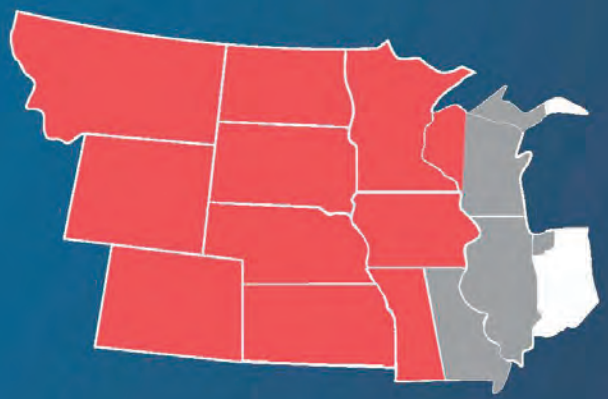

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PSC WATER RATE INCREASE ORDERS ISSUED

12/1/2021-3/25/2022

UTILITY NAME	ORDER ISSUED	OVERALL% INCREASE
Sun Prairie Utilities	12/09/21	20.39%
Mount Hope Municipal Water Utility	12/10/21	7.89%
Yuba Municipal Waterworks	12/10/21	75.69%
St Joseph Sanitary District #1	12/13/21	25.09%
Livingston Municipal Water Utility	12/15/21	21.68%
Fulton Water Utility	12/20/21	9.49%
Clayton Municipal Water Utility	01/03/22	28.58%
Village of Pewaukee Water Utility	01/03/22	22.58%
City of Cudahy Water Utility	01/04/22	5.56%
Bangor Municipal Utility	01/05/22	55.33%
Rock Springs Municipal Utility	01/10/22	68.93%
Kenosha Water Utility	01/11/22	13.60%
City of Kiel Utilities	01/11/22	41.81%
Kohler Municipal Water Utility	01/18/22	51.84%
Sauk City Municipal Water and Light Utility	01/18/22	60.8%
Prairie Du Sac Municipal Electric and Water	01/18/22	15.23%
Middleton Municipal Water Utility	01/19/22	9.66%
Merrill Water Utility	01/19/22	19.8%
Village of Grantsburg Municipal Water Utility	01/20/22	33.47%
Sheboygan Water Utility	01/20/22	7.07%
Cross Plains Water Utility	01/28/22	42.99%
Osseo Municipal Water And Sewer Utility	02/02/22	122.15%
Village of Lake Hallie Public Works	02/02/22	47.5%
Village of Plover Municipal Water Utility	02/15/22	-9%
Rice Lake Municipal Water and Electric Utility	02/17/22	8.36%
Dickeyville Water Utility	02/21/22	39.19%
City of Augusta Municipal Water and Sewer Utility	02/23/22	59.7%
Pulaski Water Department	02/23/22	21.52%
Stoughton Water Utility	02/25/22	9.6%
Williams Bay Municipal Water Utility	03/04/22	15.01%
City of Weyauwega Water and Sewer Utility	03/08/22	35.93%
Platteville Water and Sewer Utility	03/16/22	7.31%

PSC CONSTRUCTION AUTHORIZATIONS ISSUED

12/1/2021-3/25/2022

UTILITY NAME	ORDER ISSUED	CONSTRUCTION COST
Village of Lake Hallie Public Works	12/05/2021	$2,242,000
Franklin Municipal Water Utility	12/12/2021	$7,118,000
Slinger Utilities	12/24/2021	$3,275,000
Waterloo Water and Light	12/24/2021	$974,500
Altoona Municipal Water Utility	01/06/2022	$1,680,418
Kronenwetter Water Utility	02/27/2022	$338,880
Manitowoc Public Utilities	01/25/2022	$3,429,900

Wisconsin Rural Water Association

WRWA MEMBERSHIP (Annual Fee)

*WIP (individual)	$45
Transient	$65
OTM & NN System	$155
Septage Haulers/Plumbing Co.	$155
Less than 1,000 people served	$330
1,001 – 2,500	$410
2,501 – 6,000	$480
6,001 – 10,000	$550
Over 10,000	$615
Associate	$550
Corporate	$1,540
Corporate Gold	$2,880

JOURNAL ADVERTISING RATES

	MEMBER		NON-MEMBER	
Black & White Advertising	1-Time	Yearly	1-Time	Yearly
Full page	$430	$1,555	$575	$1,970
Half page	$315	$1,130	$395	$1,265
Quarter page	$215	$800	$270	$860
Business card	$160	$575	$200	$600

	MEMBER		NON-MEMBER	
Color Advertising	1- Time	Yearly	1-Time	Yearly
Inside front cover	$670	$2,430	NA	NA
Outside back cover	$800	$2,540	NA	NA
Full page	$575	$1,970	$770	$2,670
Half page	$370	$1,265	$575	$1,965
Quarter page	$270	$860	$400	$1,400
Business card	$200	$600	$335	$1,000

*For information on advertising & the benefits of membership at the different levels, please contact Renee at the WRWA office: 715-344-7778 or rkoback@wrwa.org. *Must be employed by a WRWA system, associate, or corporate member, retired and state or federal employees*

CORPORATE GOLD MEMBERS

SPECTROPHOTOMETRY FOR PROCESS CONTROL

Kay Curtin
WRWA Trainer/Technician

For ammonia and phosphorus, it doesn't take tons of time or money to check where your influent or effluent levels are standing.

As permit limits for ammonia nitrogen and total phosphorus get lower, are you able to immediately know if you're meeting them? How long does it take to receive results from your laboratory? You could be over your limits for days before realizing it and heading for a Notice of Non-compliance (NON) or worse.

That's where process control comes in. For ammonia and phosphorus, it doesn't take tons of time or money to check where your influent or effluent levels are standing. Spectrophotometry has come a long way in the past 20 years or so. Hand-held colorimeters or spectrophotometers are worth their price. You can go high or low tech, but please keep an eye on things somehow. Operators don't often take the time to check their influent, but it's extremely hard to meet permit limits when you're getting a deluge of phosphorus or ammonia from some commercial, industrial, or home "business" in your town. These sources of nutrients need to be controlled. That's a whole 'nother column! With swear words.

So how does spectrophotometry work? It uses a light beam which passes through the sample in a quartz cell called a cuvet, that has a reagent added to it. Each compound in the solution absorbs or transmits light over a certain wavelength, and the results are read and converted by the meter in mg/L. A spectrophotometer reads multiple wavelengths, so you can use it for multiple analyses. For instance, Jesse and I have Hach DR900 hand-held specs that will analyze 92 different analytes. These are fabulous but over $1000.00. If you have the money and want to get serious about your testing, a bench-top spectrophotometer is the best. But, unless you're a knowledgeable in chemistry, make sure you have good technical support and reagent kits from the company that is supplying the spectrophotometer.

If you just need results for one analyte such as ammonia or phosphorus, you can purchase a colorimeter, which just reads one analyte, such as orthophosphate You'll need to digest the sample to get total phosphorus, but you can compare with your commercial lab results and have a good multiplication factor for estimating total P. Purchase a high-level reagent kit for your influent and a low-level kit for your effluent. In just a couple of minutes, you'll have a good idea of what's coming in (extremely important for chemical removal) and what's going out (extremely important for staying out of trouble).

So, what can go wrong with using a spec? First of all, keep your cuvets clean and scratch-free. Use Kim-wipes, not your shirt tail- to clean them. Always place the cuvet in the spec in the same position. Most of the newer ones have an arrow to guide you. Zero the spec with a distilled water blank, but do not zero with a method black (one that has all the reagents but no sample). And most of all, use standards to check your spec on a regular basis. Some companies sell sealed standards made of colored gel or liquid that will last a long time if you don't open or tamper with them.

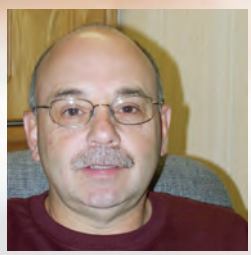
If you want to go low-tech and pay much less for a quick analysis, color wheels are another option for ammonia, nitrates, and phosphorus. These have greatly improved over the years and can give you extremely quick results. Just make certain that the operator using them isn't color-blind! It happens more frequently than you realize. Also remember that these are not legal to use for reporting effluent results to DNR.

What I'm trying to say here is DO SOMETHING to stay on top of your effluent permit limits. Jesse and I are usually called out to help after the fact – when a plant is in trouble. If you use good process control, you'll catch the problem much more quickly and can avoid those pesky NON's and NOV's. I'm not even going to get into my pet peeve of operators not using dissolved oxygen meters. That's another column with swear words. But you can still call us just for the heck of it. We like to hear from you on good days, too!

-Kay-

CORPORATE GOLD MEMBERS

Are You Using Your Head?



Vince Matarrese,
Advanced Safety Technology, Inc.
President

Head injuries are common in the workplace. The proper helmet helps prevent these from happening.

It was brought to my attention that I was wrong (not likely) and I was told there is no requirements for the type of hardhat you wear. I always thought the person in charge was responsible for protecting their employees.

Supposely, during an inspection, a State of Wisconsin, Department of Safety & Professional Services, compliance inspector commented on hardhats. He instructed a Village there were not any requirements on the type of helmet that should be worn. Referring to Type I and Type II helmets.

So, let's start with the OSHA standard, July 1st, 2010 requirements the State of Wisconsin, Department of Safety & Professional Services has adopted in SPS Code 332. I Might mention that I sat on that committee and didn't miss any meetings.

As per 29 CFR 1910, Subpart I, 1910.132 Personal Protective Equipment standard

1910.132(d) Hazard assessment and equipment selection.

1910.132(d)(1) The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer shall:

1910.132(d)(1)(i) Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;

1910.132(d)(1)(ii) Communicate selection decisions to each affected employee; and,

1910.132(d)(1)(iii) Select PPE that properly fits each affected employee.

Note: Non-mandatory appendix B contains an example of procedures that would comply with the requirement for a hazard assessment.

1910.132(d)(2) The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.

29 CFR 1910 Subpart I, App B

9. Selection guidelines for head protection. Paragraph 3

Some examples of occupations for which head protection should be routinely considered are: carpenters, electricians, linemen, mechanics and repairers, plumbers and pipe fitters, assemblers, packers, wrappers, sawyers, welders, laborers, freight handlers, timber cutting and logging, stock handlers, and warehouse laborers.

Beginning with the ANSI Z89.1-1997 standard, ANSI updated the classification system for protective helmets. Prior revisions used type classifications to distinguish between caps and full brimmed hats. Beginning in 1997, Type I designated helmets designed to reduce the force of impact resulting from a

blow only to the top of the head, while Type II designated helmets designed to reduce the force of impact resulting from a blow to the top or sides of the head. Accordingly, if a hazard assessment indicates that lateral impact to the head is foreseeable, employers must select Type II helmets for their employees. To improve comprehension and usefulness, the 1997 revision also redesignated the electrical-protective classifications for helmets as follows: "Class G -- General"; helmets designed to reduce the danger of contact with low-voltage conductors; "Class E -- Electrical"; helmets designed to reduce the danger of contact with conductors at higher voltage levels; and "Class C -- Conductive"; helmets that provide no protection against contact with electrical hazards.

Head injuries are common in the workplace. The proper helmet helps prevent these from happening. These injuries happen when workers walking into objects, objects falling from above, slipping, tripping and falling.

Wearing the right class and type of protective helmet can help prevent that head injury. In the case above, yes, the hazard assessment (excavation operations, tree trimming operations, etc.) for certain job tasks stated a Type II helmet. But, the DSPS inspector said I was wrong. Maybe they should take one of our classes!

As always, It's All About Going Home. Be safe this summer and wear the proper personal protective equipment.

Vince

Landfill Leachate Concepts

By Tony Roche

In addition to being highly variable from site to site, the composition of leachate produced at one landfill will vary over time.

Landfill leachate is a highly variable and problematic liquid that results from liquid passing through a landfill. This liquid can be present in the materials initially deposited in a landfill, or it can develop from rainwater/snowmelt percolating through the landfill (Keenan et al., 1984). The leachate is highly variable from site to site due to different landfilled contents, and is also produced at different rates as a landfill ages (Kjeldsen, et al., 2002). In addition to being highly variable from site to site, the composition of leachate produced at one landfill will vary over time. Table 1.1 gives examples of landfill leachate composition from landfills with different ages. When landfills are young, leachate is very high in biodegradable organics such as volatile fatty acids (VFAs). However, as a landfill ages, degradation of these contents will occur and not-readily-biodegradable, humic-like compounds with high molecular weight will be produced (Siemens Water Technologies Corporation, 2006). Also, it has been documented that as the proportion of VFAs decreases, biological treatments become ineffective (i.e., microorganisms performing biological treatment will not receive sufficient levels of BOD to survive), thereby necessitating other treatment procedures employing physical/chemical processes like membrane filtration and chemical precipitation (Baig et al., 1996).

Table 1.1: Typical composition of landfill leachates from municipal solid waste landfills of different ages (adapted from Baig et al., 1996).

Landfill Age	0-4 years	5-10 years	>10 years
pH	<6.5	±7	>7.5
BOD (mg·L-1)	>6000	2000-6000	<2000
COD (mg·L-1)	>20000	300-4500	<200
Nitrogen (mg·L-1 TKN)	100-2000	100-2000	100-2000
Metals (mg·L-1)	2000	<2000	<2000

Landfills are required to drain off the accumulated leachate and dispose of it in some way. Most landfills will send leachate to a wastewater plant that can treat the leachate and discharge the treated effluent to the environment. With the current PFOS issue in play, many plants will not accept leachates from solid waste facilities since there can be an issue with high concentrations of PFOS. This PFOS will generally accumulate in wastewater treatment plant biosolids and could result land spreading issues. NR 504.06 gives landfill design criteria and states that landfills must limit the amount of leachate head to one foot or less. Because of the PFOS issue, some solid waste facilities have had to store excessive levels of leachate.

As to the question of "Should I take leachate into my plant," it is very tough to answer. If a certified test can be found for leachate, it would be an easier decision. This is where compliance is coming before the ability to test. Not an uncommon occurrence. The best advice we can give is to open this discussion with your leachate supplier and work on solving the problem. Maybe they have more access to testing or have other means of reporting the level of PFOS in their leachate. *Tony*

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Wisconsin Rural Water Association

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Assisting, educating and representing our members in the Water & Wastewater Industries.

IS AN ASSESSMENT PAINFUL?

By Dan Wundrow

Right now, there are some pretty awesome incentives out there.

When it comes to the energy efficient realm I along with many others are fairly new to the thoughts and ideas out there. It can be extremely overwhelming for anyone. Yes, it can be very simple but it can also be agonizingly painful. In reality it's right in the middle; right in the comfort zone for everyone. I encourage you to reach out with any thoughts and concerns about an assessment. Talk with your water and wastewater circuit riders and myself. We can put any fears to rest. This assessment can be just for your eyes, or you can share it with the board members. Right now, there are some pretty awesome incentives out there. It would be nice to see many of you get them before they run out.

Why is an assessment a good thing to have? This is a tool that will give you a snap shot of your system performance. We can set goals for kWh/MGAL reduction and give you the means to keep moving in the right direction. Providing quality drinking water and wastewater will always remain the top goal while adding energy conservation too.

When I say it can be very simple you may think, what do I mean by simple? Well, less power equals less energy use. That's it. Cut out unneeded equipment and boom done! Saved energy and money. To be fair, that really isn't saving energy consumption the right way. I would put good money that a piece of equipment was removed just for the sake of saving money and not for the purpose of decreasing energy consumption while still maintaining optimal system use. Installing occupational sensors, that's an easy smart move to help save money. Turning the heat down for seldom occupied buildings that is also a great idea. Replacing light with LED lights, that's an easy fast way to save money. The possibilities are limitless.

I can tell you there is no part of an assessment that is agonizing. An assessment sounds scary but not as scary as energy audit. Comparing electrical consumption, flow, runtime, GPM, motor inventory, building, HVAC and lighting. That's the basic of an assessment. So why look at these items?

We can see historical trends in electrical consumption for each meter when looking at them. Those trends can help figure out the what, why and when of what is using the most amount of energy. For an example, if the total kWh is high in the winter months and lower in the summer there is a good chance there is a heating issue. If the total kWh has a constant with slight fluctuation but corresponds with flow, chances are you have a pump problem, which can be easily shown in a graph.

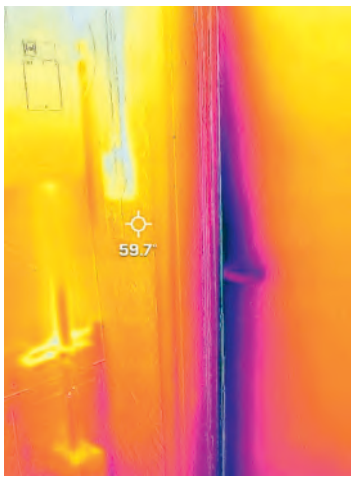
Flows are important. This is the golden number I look at. These will show the kWh/MGAL. If you remember back from my article "Budgeting and Assessment" I gave stats on where each class of system should be at, or close to. That being said some systems fall at the or below those numbers. That doesn't mean you still can't save energy and money. Using the flow and energy consumption together will show a great trend and will help guide what to look at on an on-site assessment.

Runtime for each motor is very important. I can find out the estimated runtime but having recorded runtimes are the best. This will give the most accurate assessment. Runtimes can also be used to see how the pump or motor is preforming. Using runtimes with volts, amps, and power factor will give the kWh for that motor. For example, if two identical blower motors have the same horsepower and roughly the same volts but the amps are

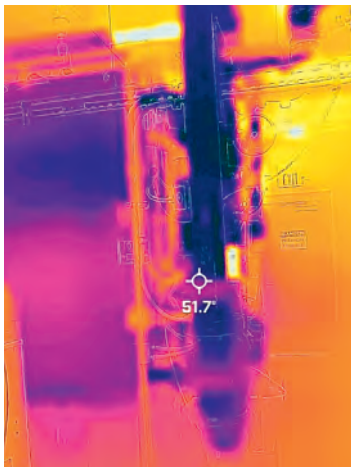
different, one motor is more efficient than the other. Then looking into why that is would be a recommendation on how to fix that problem.

Gallons Per Minute (GPM) this is something I will record while I'm on-site. For the water systems, I will take that what is recorded on the PSC report and compare to actual flow of well pump. I use this to get the daily average flow.

Motor inventory is an on-site item. You lucked out on this. I will take a detailed motor inventory and record all the information I need from a motor or pump. Some of the most important things needed for a motor tag is the horsepower, amps, energy efficiency rating, and if the pump is stamped with GPM. Once that is completed, taking amp readings is the next step. This is where the volts, amps, P.F. and runtime come into play. I will use those numbers gathered to get calculated kW and kWh for that motor. After an inventory the motors will be classified as their purpose.



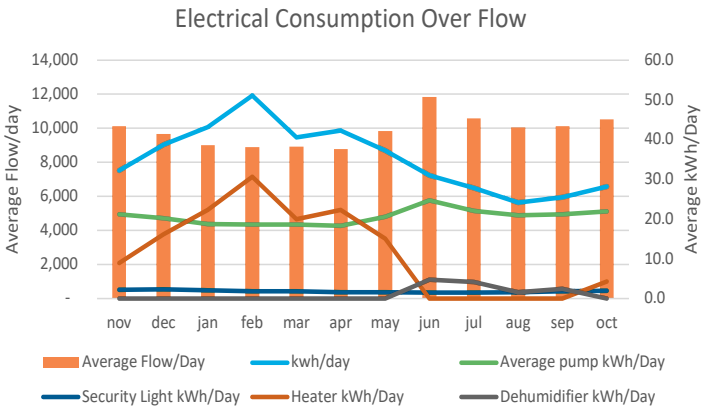
Checking over the door seals, windows, insulation and any other areas of concern with a thermal camera is a useful tool in making buildings more efficient. With the recent purchase of a camera, many operators have fun with this and had no clue that some of these issues where present. To the left is a picture of a problem with failing door seals. The dark purple and blue shows the air flow around the door seals. This operator couldn't believe how much air was coming in. He fixed the door a few days later. These are simple fixes that can be done and don't cost a lot of money. Sometimes seeing it first-hand helps. This camera also shows the effect of how water being pumped in a building is cooling the building making the heaters run more.



When it comes to HVAC, we will have an open discussion about what is good and not good to use. This is also the time we will talk about the heating needs of a building. Most water and wastewater buildings are over heated. Now in some cases yes you need to have a warmer building. I will not disagree with you. To the right is a picture of well piping and a water softener tank. As you see the well is running and the water coming into the building is at 51.7 degrees and the building temp was set at 68 degrees. While the well was running the temp was dropping in the building causing the heater to reheat the building back up to the 68 degrees. I will not dive to far into this in this article. I will leave that for its own article. Simply try to match the incoming water to the building heat while preventing freeze up will have an exorbitant amount of energy. HVAC alone can be a complicated subject.

Lighting is more of a give and take but in reality, it is what we call low hanging fruit. It's a well-known fact that LED light will save you tons of money. When it comes to which light should be converted to LED many simply change the lights within the building but forget about the outside security lights. It's common to have high pressure sodium light outside. They are more expensive to replace which could be the main reason they are not replaced. Commonly the inside building lights are turned on for 5 to 10 minutes per day. On average, however, the outside security lights will run from dusk to dawn every day. Depending on the time of year that can be 7 to 14 hours at 150watts to 300watts. In some places I have seen four street lights with 500watt bulbs. If I had to pick which light to replace first, I would always recommend changing the outside security lights first then work on the inside lights to get the biggest bang for your buck.

Below is a graph of a well house. It shows the electrical consumption by the month and flow by month. In the graph the flow is represented by the orange bars and kWh/Day is the bright blue line, average pump kWh/day by the green line, security light kWh/day is dark blue, heater kWh is the dark red line and dehumidifier is the gray line. The average pump kWh/day has a positive correlation with the flow. The security light maintains a constant value and has slight changes over the summer months. The heater line shows how over the winter months there is a steady rise of consumption. As you can see in May the heater was forgotten about and was not turned off until June once the dehumidifier was turned on and remained on until October. This graph shows a lot of useful information that can help with reducing total kWh/MGAL.



There is a lot that goes into an assessment but there is nothing fear about having one completed. It is a very simple process and takes about four to six weeks to complete. There are many other things that take place during and assessment but this is the main stage of the assessment. Recommendations will be made off from this data. Some of the recommendations are simple; others can be costly but have a fast rate of pay back. Keeping in mind that they are just recommendations and are not required to complete. Also, this at no cost to the community.

Hopefully I was able to help clear up what an assessment is and what is involved with it. If you still have concerns about having an assessment completed, please call and we can talk about them. You can also reach out to your water and wastewater circuit riders they can help set you at ease as well. If you are ready and want to have one completed, please let me know so we can get you on the books for 2022. *Dan*

Hydrant Flushing Dos and Don'ts

By Todd Weich

The combination of sediment and bacteria can restrict water flow in the pipes and contribute to pipe corrosion.

The day we have all been waiting for is almost here. Warm weather and spring time which lays out the perfect time to start taking a look at your fire hydrants while enjoying that nice fresh spring air.

Don't forget about flushing your fire hydrants. Typically, flushing the fire hydrants within your system help to ensure clean and safe drinking water. Over time, sediment and deposits, including rust and mineral particles, can accumulate naturally at the bottom of the water main. A build-up of bacteria known as 'biofilm' can also coat the pipe's inner surface. The combination of sediment and bacteria can restrict water flow in the pipes and contribute to pipe corrosion. Periodically flushing water mains removes the sediment and biofilm buildup, as well as maintains our water infrastructure and assures consistent, high quality drinking water. Not only does it ensure safe water but is it also required by NR 810.13. Also prior to any flushing procedures begin to consider giving your customers notice because there could be some discoloration of water for a short period of time.

Keep these codes in mind:

NR810.13 (2)(b) *Hydrant exercising.* All hydrants shall be exercised at least once every 2 years.

NR810.13 (2)(c) *Hydrant maintenance.* Hydrants shall be maintained in proper working condition, consistent with the manufacturer's recommendations.

NR810.13 (2)(d) *Flushing dead–end mains.* A schedule shall be established for flushing dead–end mains or mains in other areas to remove sediment or water of poor quality.

Think safety! You are dealing with a lot of pressure and volume of water. Make sure to consider flowing the water in a direction that is safe like "green space". When flushing fire hydrants there are a number of things you should be doing and observing.

FIRST, think visually! The hydrant should be inspected for any defects such as missing caps, cracked barrel, paint condition and accessibility.

NEXT, using a hydrant wrench (not a pipe wrench) remove the proper hydrant cap for the appropriate hydrant diffusing device or other methods of de-chlorination you may be using. Secure the diffusing device to the hydrant and secure the un-used discharge caps.

THIRDLY, place the hydrant wrench on the operating nut of the fire hydrant. Slowly open the hydrant to a fully open position. During this time, take a mental note of how the hydrant operates. Did it open hard? Did it have sticky spots? Once the hydrant is fully open, let hydrant flow water for approximately 10 minutes or the time frame that is necessary to achieve your goal. While flowing water, don't forget to observe the hydrant and check for leaks.

Once your goal is achieved start closing the fire hydrant slowly. Just before the hydrant is closed take the necessary samples needed. Finish closing the hydrant tight but then back the wrench up about a ¼ to ¾ of a turn to the "sweet spot". By doing that it takes the pressure off the lower seat assembly. Remove the hydrant diffuser. Make sure it drains by either visually watching the water go down the barrel or place your hand over the opening and feel for a suction on your hand. If hydrant doesn't drain, it should be pumped down to prevent stagnate water and possible freezing. Lastly you should record any pertinent information.

BUT WAIT! You're not done with record keeping. At the end of the year make sure you complete your water discharge permit that is required as of August 2021. If you are reading this article and not have filled out a discharge permit for the time frame of August to December 2021, you are in violation of a discharge permit if you did any fire hydrant flushing during that time frame.

Contact your WRWA Circuit Rider to give you technical assistance in getting compliant with the discharge report. –*Todd*

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THE METER IS RUNNING FOR RURAL WATER SYSTEMS

By Lowell Huffman

HOW RURAL PROVIDERS CAN TACKLE LCRR COMPLIANCE

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

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

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

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

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

WHAT RURAL WATER SYSTEMS NEED TO KNOW

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

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

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

LSL inventory and replacement. Utilities will be required to conduct a "location-based" inventory of publicly-owned and privately-owned LSL materials, including all systems and connections. The inventory must be submitted to the EPA within three years. Water systems with more than 50,000 customers must make the inventory public, and this is a good practice for smaller systems, as well. (See chart 1) Results also must be resubmitted alongside annual or triennial monitoring results. Once the inventory is complete, systems must develop an LSL replacement plan if lead service lines are found or if galvanized pipes that previously were connected to a lead pipe are found.

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

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

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

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

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

Regulatory thresholds. The "Action Level" of 15 ppb remains the same, but the new rule adds a "Trigger Level" of 10 ppb that serves as a new trigger for Corrosion Control Treatment (CCT) and other actions designed to get to the root of known or suspected issues. In addition, if the 90th percentile of samples exceeds 15 ppb, new rules for regulatory review, increased monitoring, CCT deployment, public notification and education, and LSL replacement kick in. (See chart 2)

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

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

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

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

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

A CARVE-OUT FOR SMALL SYSTEMS

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

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

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

THE FIRST STEP: A LEAD SERVICE LINE INVENTORY

Public water systems must develop a preliminary inventory of both public and private side service lines within three years of the final rule publication, and use this preliminary inventory to create a replacement plan for known or possible LSLs. Therefore, the best way for water systems to prepare for LCRR is to start an LSL inventory today. (See chart 3)

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

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

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

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

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

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

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

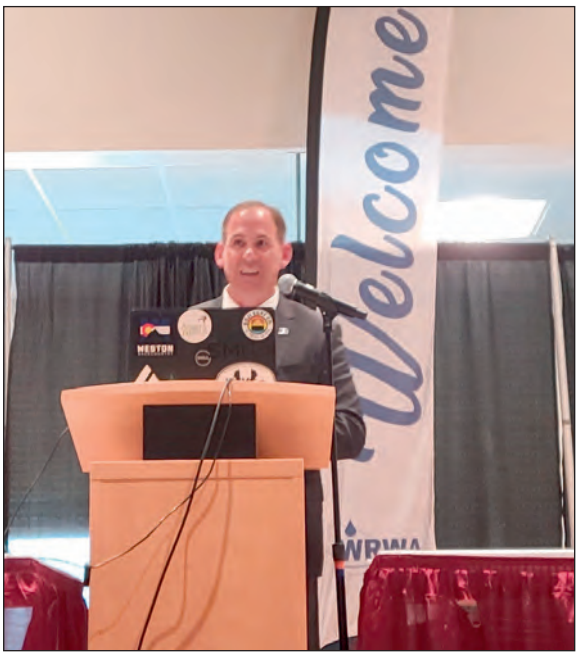
Once an LSLI is created, utilities will have the information needed to identify tier sites and conduct cost/benefit analyses of compliance alternatives.

The time has come to take action on the pending LCRR. As the great Vince Lombardi said, "If you're five minutes early, you're already 10 minutes late."

It's time to get in the game.

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

WRWA 2022 Annual Conference



Lt. John Nores, CF&W Game Warden, Keynote Speaker

WRWA Board waiting for opening session

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Best Tasting Water
Woodville

Friend of Rural Water
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Water System of the Year Award
Brian Janikowsky, Hatley

Business Member of the Year Award
CBS^2 , Inc.

Wastewater System of the Year Award
Dennis Daye, Westport

Lifetime Achievement Award
Tom Goethel, CTW Corporation

District 3 - Operator of the Year Award
Dennis Laubscher, Union Center

District 4 - Operator of the Year Award
Katie Goin, Cumberland

District 5 - Operator of the Year Award
Todd Whyte, Prairie du Chien

CONFERENCE AWARD RECIPIENTS (not shown)
2022 Friend of Rural Water: Jim Barker-Martelle Water Treatment
2022 Lifetime Achievement: Michael Fosmoen-Janesville Water Utility
Jerry Foellmi-General Engineering Company
2022 Administrative Professional of the Year: Penny Swan-Spooner
2022 Operator of the Year: District 1-Mike Pinch-New London
District 2-Marc Stephanie-Valders
2022 President's Award: All Operators
2022 Wastewater System of the Year: Westfield WWTF

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Vortex Optics Viper
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Roth Professional Services
David Beck-Brookfield

MP5 22 Cal.
Peerless
Ferguson Orr-James Orr
Coating Inspection

Stainless Steel Military
Wall Hanging
American Structures
Steve Durham-Altoona

Yeti Cooler
ISG
Jack Harrington-Shell Lake

Mantis Laser Trainer System
ME Simpson
Fred Metzler-Junction City

Camp Package
NEO
David Wills-Sensus

Crossbow & Target
Vermeer
Ryan Ellis-Mellen

4 Person Ice Fishing
Whitefishing Sturgeon Bay
Midwest Meter
Brian Rollins-Ferguson

3 Person Guided Musky/
Walleye Trip (8 Hours)
Midwest Meter
Mark Rezin-Tomah

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Mark Graff-La Crosse

Veto Pro Pal Tech-XL Tool Bag
William Reed
Jarid Ingalls-Spring Green

Cat Blind & Trail Cam
Vierbicher
Michael Kahl-Clinton

Meat Grinder
Baxter & Woodman
Jerry LaQue-Whitehall

Glen Dell Buck Target
James Orr Coatings Inspec.
Michael Kahl-Clinton

22 Henry Lever Action Rifle
WM Metering
David Beck-Brookfield

Yeti Cooler w/ Cups
Advanced Drainage Sytems
Marty Van Ells-Municipal Well & Pump

Milwaukee Tool 5 tool combo
Ford Meter Box
Tyler Sharpe-New Richmond

Vortex Ranger
1800 Rangefinder
Mead & Hunt
Matthew Duwe-Merrill

Browning 30/06 with Scope
Sabel Mechanical
Chris Massart-Algoma

Milwaukee Packout
& Flashlight
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Matthew Rehse-Horicon

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His & Hers Garmin Watches
GS Plant Optics
Nick Haak-Oregon

Hunter Widow Coach Purse
Becher-Hoppe
Wade Peterson-Baraboo

Pit Boss Griddle
Tri County Waterworks
Gary Randle-CTW

Craftsman Lawn Mower
Mulcahy Shaw Water
Dave Magnusson-MSA

Milwaukee Tool M18
Polesaw and Blower Kit
First Waterworks
Lee Anderson-La Crosse

Drone
Envirotech
Todd Peterson-Galesville

WRWA 2022 Annual Conference – RAFFLE WINNERS

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Alex Vaness-Cedar Grove

Packers Jersey & Gift Card
Ayres Associates
Brandon McKaig-Lake Geneva

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SWWO
Mark Fochs-Hilbert

Leupold VX-Freedom
3-9x50 scope
Badger Labs
Randy Atwood-Ford Meter Box

Fishing Package Rod, Reel, Tackle Box & Lures
Graef
Ben Schroeder-MacQueen Equip.

$200 Visa Gift Card,
2 Tumblers, 2 Hats
Utilitylogic
Bob Guetzkow-PJ Kortens

Trapper Turn Golf for 4
18 Holes
AFC-Waterous
Philip Judkins-Water Well Solutions

2 Bucks Tickets
April 1st Game
Mueller Company
Andy Brown-Altoon

St CroRod & Reel Combo
Visu-Sewer
David Patterson-Balsam Lake

Yeti Panga 50 Duffle Bag
Copperhead
Jesse Claflin-CBS²

A smoke portable wood pellet smoker/grill
Cedar Corp
Bernard Lenz-La Crosse

Air Rifle package
Ruekert & Mielke
Larry Gate-Prairie du Chien

Browning 30.06 Medallion
Bolt 3.5-10x40 scope
Hydro Corp
Brian Grosse-Monticello

Benchmade Saddl
Mountain Knife
Furey Filter & Pump
Neal Kolb-WALCOMET

X Vision 3-6 Nightvision
Rangefinder
Advanced Safety Technology
Bill Blashka

$500 Cabelas Gift Card
MacQueen Equipment
Todd Peterson-Galesville

Pitboss Wood Pellet Grill
Package
Crane Engineering
Larry Gates-Prairie du Chien

Oculus/Meta Quest 2 virtual
Reality System
Cretex
Bill Kaberle-Nekoosa

40" TV
Automatic Systems
Mike Wojtalewicz

Pair Of Wireless Speakers
EJ (East Jordan Iron Works)
Tyler Sharpe-New Richmond

Stand Alone Boxing Bag
and Gloves
B&M Technical Service
Mark Welch-New Berlin

Stihl Power BR430
Backpack Blower
Robert E Lee & Associate
Matt Kunz

Milwaukee Tool Combo Kit
Ferguson
John Metcalf-Hayward

Skil 6 Tool combo Kit &
Gift Card
Dixon Engineering
Travis Thull-West Bend

M18 4 Tool Milwaukee
Combo Kit
Energenecs
Dean Bergstrom-Cumberland

$500 CASH
Western WI Water
Professionals
Jeff Biberdof-120Water

2 club seats for the
Green Bay Packers
Delta 3
Jeff Deitsch-Jackson

Kdrill Auger & Milwaukee
Tool Drill
Fox Lake Fishree
Lee Andeerson-La Crosse

Costa Fishing Sunglasses
Badger Meter
Travis Thull-West Bend

Rifle Scope
Sensus
Mark Graff-La Crosse

WRWA 2022 Annual Conference – RAFFLE WINNERS

Remote control Cooler
PJ Kortens
David Tichinel-Clintonville

Buck Knives
13 PCS Kitchen cultery set
Drydon Equipment
Joseph Sobieski

Gun Safe
Core & Main
Jeremy Hoberg-Water Well Solutions

Kayak Pkg
S.E.H.
Rick Kinney-Hydro Corp

Microsoft Surface 10.5" with built in keyboard
CBS2
Brian Grossen-Monticello

$500 Cabela's gift Card
CTW
Ronnie Mumm-Bloomington

Orion Resolux 7X50 Binoculars
McMahon
Ronnie Mumm-Bloomington

Leopold Binocs & Scope
WRWA Board & Staff
Amber Hunstad-Ashland

75" Big Screen TV
Adaptor
Rick Kinney-Hydro Corp

"Going All In Bucket"
Water Well Solutions
Dave Magnusson-MSA

Adorable Puppy
H.K. Solutions Group
Tim Foster-West Bend

Fish Locator
Flyght/Xylem
John Spreda-Junction City

Vortex AMG UH-1 Gen II
Hologrphic Red Dot
Drydon Equipment
Nick Haak-Oregon

RAFFLE WINNERS (not shown)

Seeutek Alcohol Still & Growler
Tyler
Jeff Liska-Viola

Solo Firepit
Dorner
Mark Duerr-Mulcahy Shaw

Garmin Fish Locator
Prinsco
Seth Barstad-Westby

Gun
J&R Supply
Dave Cardinal-Hydro Corp

Inflatable Pro Kayak 2 Person
L&S Electric
Jerry Craker-La Valle

Eskismo Ice Shanty and Power Auger
Etna Supply
Bernard Bartz-Alma

Turkey Hunting Package
Kunkle Engineering
Bill Kaberle-Nekoosa

Guided Duck Hunt on the Horicon Marsch
Chuck Dodge
Daniel Feiter-Pewaukee

Grill Package
Town & Country Engineering
Daniel Feiter-Pewaukee

Remington 870
KLM
Joseph Sobieski

Hoyt Bow
Hawkins Water Treatment
Alex Ellis-Mulcahy Shaw

Browning 6.5 Creedmor
LW Allen
Gary Randle-CTW

One Nite stay @ Chula Vista
General Engineering
Chris Olson-Onalaska

Browning BPS 12 ga
Municipal Well & Pump
Joe Kniseley-Taylor

$400 CASH
Northern Lake Service
Jeremy Hoberg-Water Well Solutions

$500 of Bourbon, Decatur & glasses
Fischer-Harris/ADIP
Chris Goodell-Wheeler

$250.00 Box Of Booze
Sealing Systems
Bill Tess-Edgar

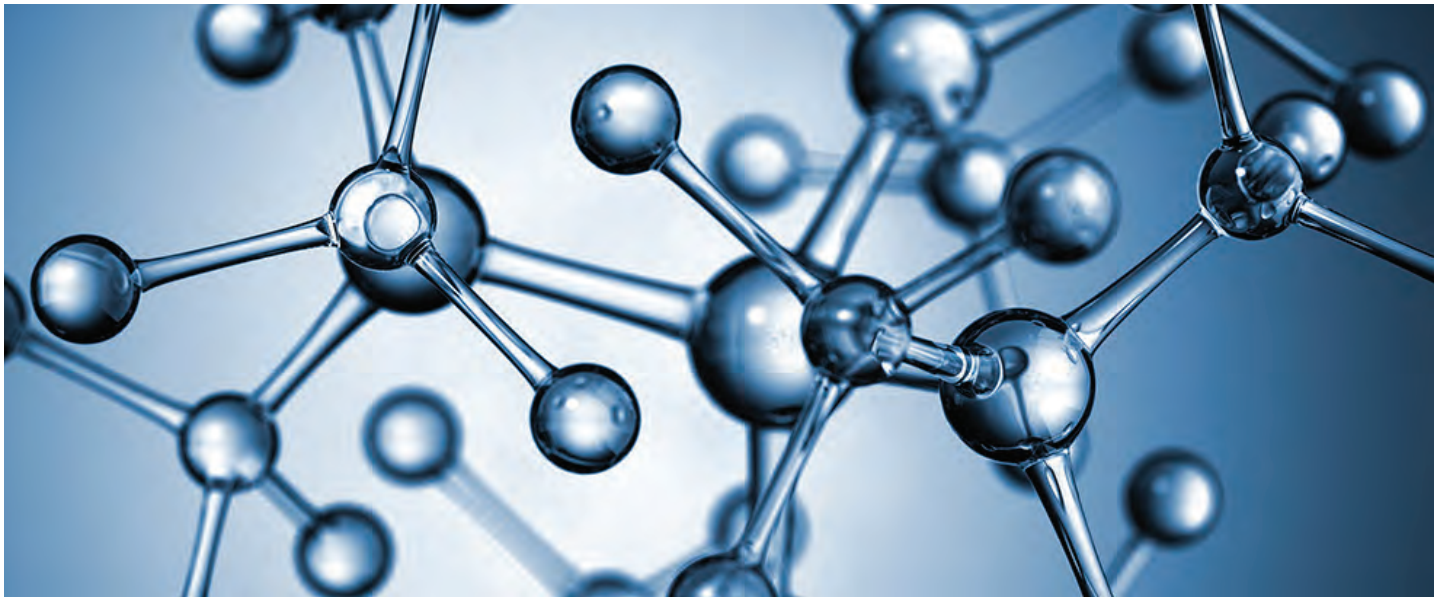
$300 Scratch Off Lotto Tix & $200 Cash
Martelle Water Treatment
Paul Ludwig-Furey Filter & Pump

GRAND PRIZE
Dennis Baldwin-Tomah

THANK YOU

to everyone for making our WRWA 2022 Annual Conference *A BIG SUCCESS!*

BASIC PFOS & TESTING



Jeff LaBelle,
WRWA Technical Assistance Director

Please as water operators take this to your boards and ask them what you should do.

I would like to give a quick Thank You to everyone that helped make the 2022 Conference a Great Success. Congratulations to all the award winners you do the industry proud.

Would like to go through a little about PFAs, PFOs. Perfluoroalkyl and Polyfluoroalkyl substances have been around since the 1950s, they are manmade chemicals not naturally occurring and are used in the manufacture of nonstick cookware, grease resistant papers, stain resistance fabrics, older firefighting foams, cleaning products, personal care products like shampoo and nail polish, the list goes on. These items have become regularly used household and industrial items that we don't even think of.

The EPA has been looking into the health effects of these items that are referred to as forever chemicals, meaning they will never disappear, so we have to learn to deal with them. PFAS could be in the food you eat, water you drink, consumer products you buy, and workplace environments. EPA research has diet as the main contributor of PFAS exposure with drinking water and dust being additional. High levels of PFAS may increase cholesterol levels, decrease how well the body responds to vaccines, increase risk of thyroid disease, decrease fertility in women, increase risk of serious conditions like high blood pressure or pre-eclampsia in pregnant women, lower infant birth weights (however the decrease in birth weight is small and may not affect the infant's health.

The Department of Natural Resources had asked the Department of Health Services to look into what they felt the level of PFAS should be for human health standard in Wisconsin. The DHS proposed to the DNR 20 parts per trillion. The EPA number at this time is recommended at 70 parts per trillion. The rule making is a long-drawn-out affair with continuing research on effects and at what levels. The Natural Resources Board rejected the DNR and DHS level at 20ppt and instead recommended the 70ppt that the EPA has out at this time. The actual levels that this finally settles at are really unknown at this time.

The DNR at this time is offering free testing of PFAS as you all know from letters received. Please as water operators take this to your boards and ask them what you should do. Give them the facts of what you know of your communities and if there are possibilities for PFAS. Be honest and fair with your assessments and ask them to make the decision as how to move forward. This decision should not rest on you the operator. Some points to discuss are, do you have any possible sources within your aquafer? Know the pulse of your community. Help your community understand what part/per/trillion means. Imagine you have to clean 500 swimming pools each with 20,000 gallons. One drop splashes out, that's 1ppt. The sun is 93 million miles away. You move 6inches toward it. That's 1ppt.

Jeff

WRWA

WATER INDUSTRY PROFESIONALS

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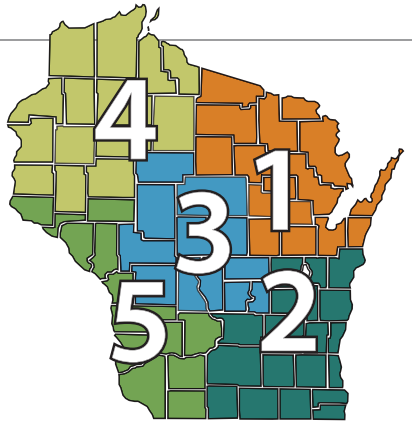
WRWA
System Member List



DISRICT 1 (Northeast)
**2YK, LLC
Algoma
*Allouez
Antigo
*Ashwaubenon
Bailey's Harbor WWTP
Bear Creek
Bellevue
Birnamwood
Black Creek
Bonduel
Bowler
Brazeau Sanitary System #1
Cecil
Clintonville
Coleman
Combined Locks
**Conserve School
Crandon
Crivitz
Darboy Sanitary District
Denmark
*DePere
Eagle River
Egg Harbor
Elcho Sanitary District
Embarrass
Ephraim
Fish Creek Sanitary District #1
Florence
Forest County Potawatomi
Freedom Sanitary District #1
**Geiss Inc
Gillett
Goodman Sanitary District
Grand Chute
*Green Bay
Greenville Sanitary District
Gresham
**Hiawatha Mobile Homes Estates
Hobart
Holland Sanitary District #1
Hortonville
*Howard
Iola
*Kaukauna
Kewaunee
Kimberly
Lakeland Sanitary District
**Lakeland Village
Lakewood Sanitary District #1
Laona Sanitary District
Lawrence Utility District
Ledgeview
Lena
Little Chute
Luxemburg Wastewater Treatment Facility
Manawa
*Marinette
Marion
Mattoon
Menominee Tribal
*Merrill
**Merrill Area Public Schools
**Natural Beauty Growers
New London
Niagara
Nichols
**Northernaire Sanitary District
Oconto
Oconto Sanitary District #1
Oconto Falls
Oneida Nation Utility
Peshtigo
Phelps Sanitary District
Pound
Pulaski
Rhinelander
Russell Sanitary District #1
Scott
Seymour
Shawano
Shawano Lake Sanitary District
Shiocton
Sister Bay
Sturgeon Bay
Suamico
Suring
Three Lakes Sanitary District
**Thunder Properties, LLC
Tigerton
Tomahawk
Wabeno Sanitary District
Waupaca
Wausaukee
Weyauwega
White Lake
**Wisconsin Veterans Home
Wittenberg
Wrightstown
Wrightstown Sanitary District #1

DISTRICT 2 (Southeast)
**7 Mile Fair Inc.
Adell
Albany
Algoma Sanitary District #1
Allenton Sanitary District
Arlington
Ashippun Sanitary District
**Asset Development Group Inc.
**Autumn Ridge Water System, LLC
*Beaver Dam
Belgium
Belleville
*Beloit
Black Earth
Bloomfield
Blue Mounds
Brandon
Brillion
Bristol
Brodhead
*Brookfield
Brookfield Sanitary District
Brooklyn
Brownsville
Browntown
Burlington
Caledonia Water Utility District
Cambria
Cambridge
Cambridge – Oakland Wastewater Commission
Campbellsport
Cedarburg
**Cedar Crest Specialties Inc
Cedar Grove
**Cedar Lake Home
Chilton
Cleveland
Clinton
Clyman
Columbus
**Concordia University Wisconsin
Consolidated Koshkonong Sanitary District
Cottage Grove
**Country Acres Mobile Home Park Ltd
**Country Aire Mobile Home Park
Country Estates Sanitary District
Cross Plains
**Crystal Lake RV Park
*Cudahy
**Dakota Capital Park
Dane
**Dairyfood USA, Inc.
Darien
Deerfield
DeForest
Delafield
Delavan
Delavan Lake Sanitary District
**Don's Mobile Manor Inc
Dousman
East Troy, Town of
East Troy, Village of
Eden
Edgerton
Elkhart Lake
Elkhorn
Evansville
Fairwater
Fall River
*Fitchburg
*Fond du Lac
Fontana
Footville
*Fort Atkinson
Fox Lake
Fox Point
Franklin
Fredonia
Friesland
Fulton
**Geneva National Services
Genoa City
*Germantown
Glenbeulah
*Glendale
*Green Bay
*Greendale
**Hale Park Meadows Water Trust
Harmony Grove Sanitary District
Harrison
Hartford
Hartland
**HB Performance Systems Inc.
Hilbert
Horicon
Hustisford
Ixonia Sanitary District #1
Jackson
*Janesville
Jefferson
Johnson Creek
Juneau
Kellnersville
Kewaskum
Kiel
**Kikkoman Foods Inc
Kohler
**Lad Lake Inc
Lake Como Sanitary District #1
Lake Geneva
**Lake Meadows Water Trust
Lake Mills
Lannon
LeRoy
Lodi
Lomira
Lowell
*Madison
*Manitowoc
Maple Bluff
Maribel
Marshall
Mary Hill Park Sanitary District
Mayville
Mazomanie
McFarland
*Menasha
Menasha Utility District
Menomonee Falls
*Middleton
*Milwaukee
Milton
Mishicot
Monona
*Monroe
Monticello
Mount Horeb
Mukwonago
*Muskego
*Neenah
New Berlin
New Glarus
New Holstein
North Fond du Lac
Northern Moraine Utility Commission
*Oak Creek
Oakfield
*Oconomowoc
Oostburg
Omro
Oregon
Orfordville
*Oshkosh
Palmyra
Pardeeville
**Pat's Services, Inc.
Pewaukee, City of
Pewaukee, Village of
*Pleasant Prairie
Plymouth
**Plymouth Joint School District
Plymouth Sanitary District (Hanover)
Portage
Poynette
**Rainbow Lake Manor
Randolph
Random Lake
Reedsville
Reeseville
Rio
Ripon
**Robert William Park Water Assoc
Rochester Sewer Department
**Rock Prairie Montessori School
**Rock River Leisure Estates Cooperative
**Rock River Shores Manufactured Housing Community
Rosendale
S & R Egg Farm, Inc.
**St. Benedict's Abby
St. Cloud
St. Nazianz
Salem Utility District
Saukville
**Shady Hill Mobile Home Park
Sharon
Sheboygan Falls
Sheboygan, Town of
Sherwood
*Shorewood
Shorewood Hills
Slinger
**Snug Harbor Inn
Somers
*South Milwaukee
Stoughton

*Associate Members (Over 10,000 pop.) **Other Than Municipal

*Sun Prairie
**Sunnyfield Acres Water Association
**Sunnyside Estates
Sussex
**The Knolls Water Co-Operative
Theresa
**Tremain Mobile Home Park
**Twin Lakes Park Co. Op. Inc
*Two Rivers
Union Grove
Valders
Verona
WalCoMet
Waldo
Walworth
Waterford
Waterloo
*Watertown
*Waukesha
Waunakee
*Waupun
*Wauwatosa
*West Allis
*West Bend
Westport
**Wheatland Estates Mobile Home Park
**Wheel Estates, Inc Mobile Home Park
Whitelaw
*Whitewater
Williams Bay
Wind Point
Windsor Sanitary District #1
Winneconne
**Winneconne Community School District
**Wright's Mobile Home Park
Wyocena

DISTRICT 3 (Central)

Abbotsford
Adams
Alma Center
Almond
Amherst
Athens
Berlin
Biron
Black River Falls
Brockway Sanitary District #1
Brokaw
Camp Douglas
Cashton
**Cawley Creek Village Inc.
Chelsea Sanitary District
Chili Sanitary District #1
**Clark Co Health Care Center
Colby
Coloma
**Community Water & Sewer
Curtiss
Dorchester
Edgar
Elroy
**Fox Marquette Estates
Friendship
Gilman
Granton
Green Lake
**Green Lake Conference Center
Green Lake Sanitary District
Greenwood
Hancock
Hatfield Sanitary District 1
Hatley
Hixton
**Holiday Park I & II
Hustler
Junction City
Kendall
Kronenwetter
Little Green Lake Protection & Rehab. District
Loyal
Lyndon Station
Marathon
Markesan
*Marshfield
Mauston
Medford
Melrose
Merrillan
Milladore
Montello
Mosinee
Necedah
Neillsville
Nekoosa
Neshkoro
New Lisbon
Norwalk
Oakdale
**Ocean Spray Cranberries, Inc. - Tomah
Owen
**Pineland Park Enterprises LTD
Pittsville
Plainfield
Plover
Port Edwards
Princeton
Redgranite
Rib Lake
Rib Mountain Sanitary District
Rome
Rosholt Sewer Commission
Rothschild
Schofield
Silver Lake Sanitary District
Sparta
Spencer
Stetsonville
*Stevens Point
Stratford
Taylor
Thorp
Tomah
Union Center
Unity
**Village Acres Mobile Home Court
Vesper
Warrens
*Wausau
Wautoma
Westboro Sanitary District #1
Westfield
*Weston
Whiting
Wilton
Withee
Wonewoc

DISTRICT 4 (Northwest)

Almena
Amery
Ashland
Baldwin
Balsam Lake
Barron
Bayfield
Birchwood
Bloomer
Boyceville
Boyd
Bruce
Butternut
Cable Sanitary District #1
Cadott
Cameron
Catawba-Kennan Joint Sewage Commission
Centuria
Chetek
*Chippewa Falls
Clayton
Clear Lake
Clover Sanitary District #1
Colfax
Cornell
Cumberland
Dallas
Deer Park WWTP
Downsville Sanitary District #1
Dresser
Drummond Sanitary District #1
Elk Mound
Emerald – Greenwood Sanitary District #1
Exeland
Fifield Sanitary District #1
Frederic
Glen Flora
Glenwood City
Glidden Sanitary District
Grantsburg
Hammond
Hawkins
Hayward
Hudson
Hurley
Iron River Sanitary District #1
Joint Water Quality Commission of Danbury & St. Croix Chippewa Indians of WI
Knapp
Knight
Lac Courte Oreilles Public Works Department
Ladysmith
Lake Hallie
Lake Holcombe Sanitary District #1
Luck
Madeline Sanitary District
Manitou Falls Sanitary District #1
Mason
Mellen
*Menomonie
Mercer Sanitary District #1
**Middle River Health & Rehab Center
Milltown
Minong
Montreal
New Auburn
New Richmond
North Hudson
**Northwood School District
Osceola
Park Falls
Phillips
**Pleasant Valley Properties of WI, LLC
Port Wing Sanitary District
Prentice
**Primera Foods Corporation
Radisson
Red Cliff North
Rice Lake
*River Falls
Roberts
**S&J Wild River MHP
St. Croix Falls
Saxon Sanitary District #1
Sheldon
Shell Lake
Siren
Solon Springs WWTF
Somerset
Spooner
Spring Valley
Stanley
Star Prairie
Stone Lake Sanitary District
**Stresau Lab Inc
*Superior
**T.A.P. Investments
Tony
Trade Lake
**Troy Glen Court
Turtle Lake
Washburn
Webster
Weyerhaeuser
Wheeler
Winter
**Wisconsin Structural Steel
Woodville

DISTRICT 5 (Southwest)

**Advanced Plumbing Systems
Alma
Altoona
Arcadia
Arena
Argyle
Augusta
Avoca
Bagley
Bangor
Baraboo
Barneveld
Bay City
Belmont
Benton
Blair
Blanchardville
Bloomington
Blue River
Boscobel
Cassville
Cazenovia
Chaseburg
Cobb
Cochrane
Coon Valley
**Coulee Region Enterprises Inc
Cuba City
Darlington
**De Soto Area School District
**Dell Creek Estates
Dickeyville
Dodge Sanitary District #1
Dodgeville
Durand
Eastman
Eleva
Ellsworth
Elmwood
Ettrick
Fairchild
Fall Creek
Fennimore
Fountain City
Galesville
Gays Mills
Genoa
Gratiot
Hazel Green
Highland
Hillsboro
Hollandale
Holmen
Independence
Ironton
Kieler Sanitary District #1
*La Crosse
La Farge
La Valle
Lake Delton
Lancaster
Lincoln Sanitary District #1
Linden
Livingston
Loganville
Lone Rock
Maiden Rock
**Marell Mobile Home Courts
Merrimac
Mineral Point
Mondovi
Montfort
Mt Hope
Muscoda
Nelson
North Freedom
*Onalaska
Ontario
Osseo
Patch Grove
Pepin
Pigeon Falls
**Pine Creek Water
**Pine Edge Mobile Home Park
**Pinewood Court Inc.
Plain
*Platteville
Potosi-Tennyson
Prairie du Chien
Prairie du Sac
Prescott
Readstown
Reedsburg
Rewey
Richland Center
Ridgeway
Rockland
Rock Springs
**Saint Bede Monastery
Sauk City
**Sauk County Health Care Center
**School District of Alma
**School District of Mondovi
Seneca Sanitary District #1
Sextonville
Shelby Sanitary District #2
Shullsburg
Soldiers Grove
South Wayne
Spring Green
St. Joseph Sanitary District #1
Stoddard
Strum
Trempealeau
Viola
Viroqua
Wauzeka
West Baraboo
West Central Wisconsin Biosolids Facility
West Salem
Westby
Whitehall
Wiota Sanitary District
Wisconsin Dells

*Associate Members (Over 10,000 pop.) **Other Than Municipal

NRWA

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- Interest rates are at an all-time low.
- More project contractors are available, increasing the number of bids, potentially lowering project costs.
- Fuel costs are low, lowering pipe related costs.
- Most material costs for projects are down.
- Shipping costs for many have decreased.
- Road and water projects are easier to schedule due to decreased volume in traffic.
- Low construction costs and available contractors are not guaranteed to last.

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Water Surplus mobile treatment trailer parked next to Well #1.

Benzene Contamination Requires Creative Solution in La Valle

Andrew Aslesen,
WRWA Source Water Specialist

For 65 years the single well provided excellent water quality to the village residents.

The Village of La Valle is a small community in the northwest corner of Sauk County. The water system utilizes a single municipal well to serve the population of around 360 people. The 312 foot deep well was drilled in 1953 and pumps water at 200 gpm from the prolific sandstone bedrock aquifer comprised of Cambrian age Wonewoc and Mount Simon formations that underlie the area. For 65 years the single well provided excellent water quality to the village residents. Unfortunately, in 2020 during the regular Safe Drinking Water Act sampling Benzene was discovered in the well. Benzene is a volatile organic compound and is among the most widely used chemicals in the United States. It is commonly used to make other chemicals including plastics, lubricants, rubbers, dyes, detergents and pesticides. It can also be used as an industrial solvent or as a gasoline additive, but these uses have been greatly reduced in recent decades. Benzene is a known carcinogen associated with an increased risk of cancer and the EPA has a maximum contaminant level for Benzene in drinking water of 5 ug/L (micrograms per liter).

With the prolific use of Benzene in the US, and particularly as a fuel additive, it is common to find elevated levels in areas surrounding leaking underground petroleum storage tank sites and it's not uncommon for municipal wells to occasionally detect trace levels of Benzene below the MCL of 5 ug/L. The level of Benzene in La Valle's well during the February 24th 2020 VOC sampling was 37.3 ug/L or roughly seven times the MCL. Considering that all previous samples have shown no detections of Benzene, this result was somewhat shocking. Subsequent sampling over the next few months showed rapidly increasing Benzene levels up to 112 ug/L in December 2020. The sudden appearance and rapid rise of Benzene levels in the well

GAC treatment vessels inside the mobile treatment trailer.

Piping inside the wellhouse, through the temporary connecting structure into the mobile treatment trailer.

seems to indicate the source is a recent environmental release of free product containing Benzene and that the source is likely nearby.

Trying to find the source was the village's first thought. Groundwater flow near the well comes from the north. The well is located in the northern part of the village in a residential area. To the north beyond the village boundary is a mix of agricultural land and forest land. La Valle contacted Rural Water and I assisted them by utilizing a groundwater flow model developed for Sauk County by the Wisconsin Geological and Natural History Survey to delineate the groundwater capture zone for the well. The five year time of travel extends up gradient (directly north) about 550 feet. There are only 3 houses within the capture zone and another 4 or 5 houses located just outside the capture zone. None of the residences directly up-gradient from the well are known to have petroleum storage tanks on site. The nearest known up-gradient fuel storage tanks are at a gas station and service center located about one-half mile north/northeast of the well along State Highway 58, which is a far distance for petroleum products to travel in groundwater making it an unlikely source of Benzene contamination. In addition to this, the public works director collected water samples from two private wells located just west of directly up-gradient and those wells were free of Benzene.

With no obvious source of Benzene the village has no way of knowing if levels will continue to rise or eventually go down. The only available option was to treat water from Well #1. The village worked with their engineer Mid States Associates out of Baraboo and mobile treatment supplier Water Surplus to bring in a semi-trailer with a portable treatment system. A section of the wellhouse wall was removed so water could be re-routed from the well, through a temporary connecting structure, into the trailer where it is treated with a series of two Granular Activated Carbon filters, then back into the wellhouse for distribution. The treatment was brought online in April 2021 and the first of the two filters is effectively removing all of the Benzene. Since water is run through two filters in series, the second filter serves as a precautionary backup filter in case any Benzene is not removed by the first one. Water is sampled monthly after the first filter and to date, no Benzene has been found after the first filter. Since bringing the treatment system online the village has continued to test raw water for Benzene to keep track of background concentrations in the groundwater. Raw water Benzene levels have continued to rise through 2021 with the highest sample showing 253 ug/L. This supports the idea that a recent release close to the well is the source of Benzene.

In addition to installing the temporary treatment system on Well #1, the village immediately started the process of developing a second well. A viable piece of land was acquired on the south side of the village, south of the Baraboo River, far from the contamination at Well #1. A test well was drilled in summer 2021 and a well site investigation was completed. Initial water quality results from the test well show greatly improved water quality in multiple parameters over Well #1. Additionally, the new well will be constructed with a design pumping capacity of 500 gpm with the capability of pumping 750 gpm if needed. The final well is expected to be drilled in Summer of 2022 and the well should be brought online in late 2022 or early. The process has been painfully long, especially considering the village is paying to rent the treatment system. It's unfortunate that the regulatory agencies were unwilling or unable to expedite the process of citing a new well considering the unprecedented nature of the situation.

The new well will provide the village with improved water quality, facilities that are constructed to meet current codes and increased capacity. After Well #2 is brought online, the next steps are unclear. The village could pursue a permanent treatment option at Well #1, but that would require the construction of a whole new wellhouse that would be capable of holding the treatment system and be built to current construction codes. Additionally, the well does not meet the current minimum casing depth of 60 feet, so the well would likely need to be lined or reconstructed. A better option would likely be to abandon Well #1 and search for an additional new well site. With a population of only 360 people, funding a second new well is not likely to be feasible. Unless funding is made available to help the village pay for a second new well, they will likely find themselves in the vulnerable position of only having one municipal well again. *Andrew*

Perception

By Kelly Thomas

Have you ever driven through a community and thought to yourself, "This would be a great place to live?" Would you like visitors to your community to think the same about your community? First impressions are a powerful perception in the human mind. In fact, first impressions may be a deciding factor for many people. That is an unfortunate statement…but true. First impressions may imply impressions that are simply untrue, but in some cases they may be spot on.

Your water tower is the billboard for your community. A shiny clean exterior of your water tower could imply cleanliness or even clean water. Even though you cannot see the inside of a water tower from the street, a rusty or dirty water tower may be perceived as containing dirty water inside. This is not a fair perception. But you cannot control the judgements of others…or can you?

It's time to tidy up you community. Pick up the litter daily. We all do our "rounds" each day. If you see trash, pick it up. If not you, then who? Litter is a sign of laziness -- not only from the person who littered, but to the people responsible for cleaning it up.

Mow the grass. Yes, we all know mowing the grass is time consuming, and time is money. However a nicely manicured lawn is expected and nobody thinks about it until the green areas are overrun with long uneven grass or weeds. Be sure to use the weed whip as well. Long grass around trees, poles, buildings or even grave stones is not a good look for the community. Then be sure to sweep or blow the clippings off the walks and streets.

Keep the public places clean and neat. Your public buildings should not have paint flaking or missing. Park benches and picnic tables should also be painted and clean. Public restrooms should be clean and operational. People always remember where and when not to take a rest stop, and typically share that information with others.

Take time to sweep the streets. Whether you use a powered sweeper or you use a broom, keep the gutters free of debris. Not only does it keep the community looking clean, it keeps your rain water catch basins free and clear to operate as designed. After a steady rainfall, visit those catch basins known to gather dirt, grass, leaves and road grime and clean them up so they are ready for the next rain.

There is a place for everything, so put everything in its place. Clutter can be an eye sore. Keep things put away. Clean your tools prior to storing them. Maintain your tools and equipment. Grease and change the oil in your equipment. When is the last time your shop floor saw a broom? Sweep. A clean floor is a sign of somebody who takes pride their property and possessions.

Be proud of your community. Show that you care. You are not just maintaining the community and its residents, but maintaining a showcase for visitors and attracting families to reside in and help your community prosper.

Stay safe, stay healthy. *Kelly*

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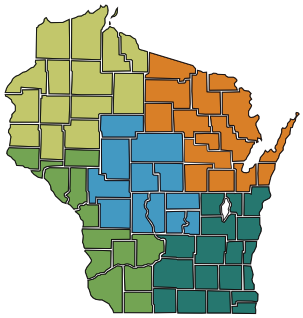

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UP THE CREEK

Ken Blomberg,
WRWA past
Executive Director

Woodcock Return

If it were not for alder and aspen, tadpoles and spring peepers, earthworms and grubs – woodcock would not return each spring to dance on our property. Without spring trilliums and cattails, marsh marigolds and skunk cabbage – our piece of land would not be complete. With old man winter still knocking at our doors, it's hard to believe that woodcock will be back in a couple of weeks.

Forty years ago, Andy, the town assessor called a large portion of our property wasteland and it appeared exactly as that – wasteland on the tax roll. It was a term used interchangeably with wetlands and swamp and used to justify a lower assessment and tax. To a farm-based township, if one couldn't work the land, it was considered worthless. However, to resident woodcock, land value was measured in available food and shelter – and to that extent, they consider themselves rich indeed. You see, as the water table comes close to the surface, so too does the worm supply – a staple of their diet. Since the bill of a woodcock is only as long as a paper dollar is wide, a two and a half inch reach is the extent of its ability to grab dinner.

When the snow melts and the ground thaws out some time later this month - woodcock will return after a long journey from their southern wintering grounds - maybe as far as Louisiana. Should one or more decide to stop, then our land becomes part of their northern breeding grounds. Much to our delight and to that of our bird dogs, woodcock live and dine around here for nearly seven months of the year.

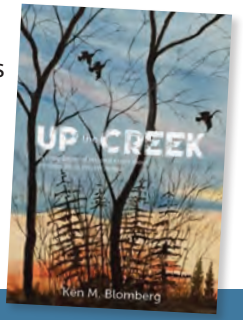
Spring woodcock migration is fueled by daylight, wind and the urge to mate. Male birds actively perform their courtship "sky dance" in likely spots along the way north. Spring and fall, they feed and loaf in sheltered covers during the day and migrate after dark. Traveling at heights of somewhere around 50 feet and depending on wind direction and speed, they can cover 30 to 200 miles a day, alone, or in loose flocks - often called "flights." All along the route, male woodcock set up shop at openings in the woods - called singing grounds - next to suitable nesting habitat that attract females.

By late March, local male woodcock, most likely following the river valley, will arrive and claim one of several singing grounds on our property. They begin dancing in the sky at dusk each evening, hoping to lure any early arriving females. With a federal permit to band woodcock, my sons and I have set long, fine mist nets on the singing grounds for many years. Male birds begin "peenting" on the grounds about twenty minutes past sundown. If we're lucky, the bird gets tangled in the nets and we fasten a US Fish and Wildlife Service (USFWS) aluminum band to one of its legs. We take the appropriate measurements, including the length of its bill, which for males, measures around 66 millimeters. When we're done collecting the data, the bird is released into the darkness of the early night. Interestingly, we often hear them "peenting" even before we're done taking down the nets.

Some early spring males are migrants on their way to more northerly breeding grounds. They pick up favorable winds and continue up the Wisconsin River valley until they hit the south shore of Lake Superior, where they most likely follow a northwesterly direction to somewhere in Minnesota, or Canada. The aluminum band they carry may ultimately tell their story. Local birds hang around all summer and when nesting begins around the second week of April, we keep the dogs out of the woods until the end of July. By early August, we're able to once again train our bird dogs on the adults and fully developed young of the year.

Come early October, when powerful northwest winds and frosty nights return to the northern fringe of their range, woodcock begin a southerly migration. The exodus typically peaks in late October and early November, but can begin as early as September and last well into November. With the coming of autumn, winds will push large numbers of woodcock south. And once again, the cycle continues.

Autographed copies of Blomberg's *Up the Creek, Letters from Art and Wisconsin Bird Hunting Tales* are available from the author at **eaupleinekennels@gmail.com.**



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