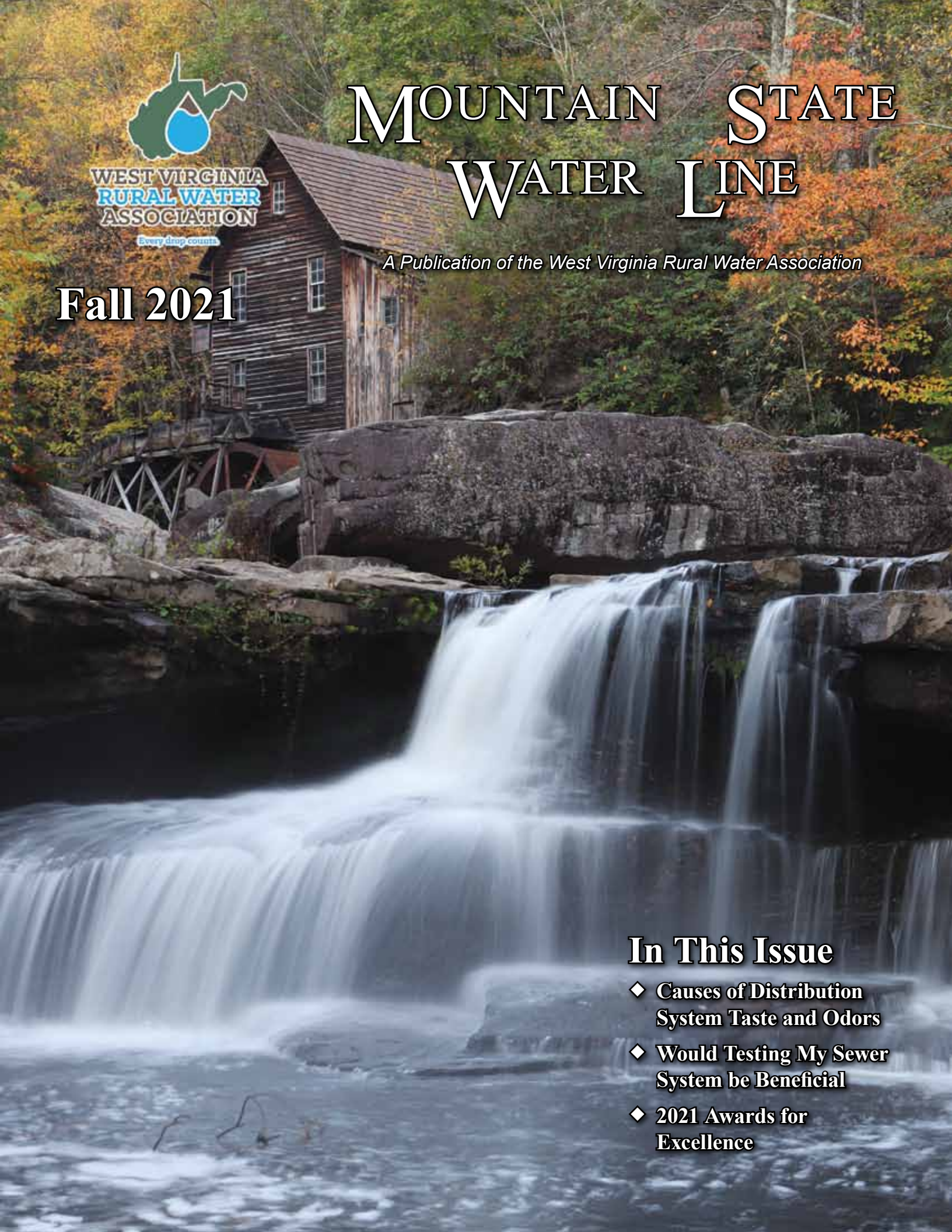

WEST VIRGINIA RURAL WATER ASSOCIATION

Every drop counts

Mountain State Water Line

A Publication of the West Virginia Rural Water Association

Fall 2021

In This Issue

- Causes of Distribution System Taste and Odors
- Would Testing My Sewer System be Beneficial
- 2021 Awards for Excellence

West Virginia Rural Water Association

Fall 2021

Articles and Features

Babcock State Park, WV
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West Virginia Rural Water Association, WVRWA, is a non-profit organization of rural and small publicly owned water and wastewater systems. The vision of the WVRWA is to be the recognized leader and respected voice for water and wastewater systems. The mission or purpose of WVRWA is to provide and promote the highest level of utility service, technical assistance, training, and advocacy for all West Virginia water and wastewater systems.

WVRWA is affiliated with the National Rural Water Association.

By Eric Bennett, WVRWA President

President's Message

Fall is upon us once again. This time of year is one of the most stunning for the state – leaves are changing colors and the weather is cooling down. I always know that fall is right around the corner once conference is over. The WVRWA 2021 Annual Technical Conference was a great success. I've never seen so much excitement and joy for our members to be able to come together again. Obviously, we're still struggling to make it through to the other side of this pandemic, but that made this conference all the more special. We had a great variety of training classes and the Exhibit Hall was packed as people were able to connect and network with one another. Mark Bowe was the Keynote Speaker at the Opening Session and we even shared Family Feud with our rural water family. If you have any suggestions for future conferences, don't hesitate to reach out to the WVRWA staff and/or board members.

As your new president, I want to take the time to thank you for your hard work and dedication to your utility, community, and state. Never forget that, as water and wastewater professionals, you are essential. I look forward to working with everyone involved with WVRWA. We're constantly searching for ways to provide our members with the highest level of assistance. One of our most recent endeavors, the Apprenticeship Program, started earlier this year with its Pilot Program of apprentices. As I mentioned earlier, we're still in the midst of the pandemic, which is causing an even greater number of operator shortages than we were already facing. Our next group of apprentices will be starting their journey into the water and wastewater industry soon. Once again, we are working on new programs and benefits to meet your needs. Please reach out to us with any questions, comments, or suggestions. We're here to help you.

I would also like to express my congratulations to Amanda McGinnis for winning two awards in the photo contest at the National Rural Water Conference in Milwaukee, WI in September. If you have the opportunity, please congratulate Amanda on her triumph and ask to see the outstanding photographs that she took. While at the national conference, we had the opportunity to network on the national level and attend training on many significant issues affecting the industry.

It's an honor to represent and serve you as president of WVRWA.

Sincerely,

Eric Bennett ■

WWW.WVRWA.ORG

Online Training Classes

WVRWA has teamed up with SunCoast Learning Systems, Inc. to bring online computer-based water and wastewater training to operators throughout the state. Through WVRWA Online Learning, you now have the freedom to learn from home, the office, or your local library. Training can be accessed directly from your personal computer using your internet connection.

Water and wastewater operators registering for e-Learning courses will have a menu of courses from which to choose. We are constantly adding and updating courseware to reflect changing industry needs and regulations. For more information, you can visit www.wvrwa.org or contact the office at 800-339-4513. Some of the available courses are shown below.

Course	CEH Hours	Approved for	Price
Drinking Water Mathematics	10	Water/WW	$180
Surface Water Treatment	10	Water	$180
Basic Environmental Chemistry	10	Water/WW	$180
Small Water Systems I	5	Water	$100
Chlorinator Systems & Chemical Handling	10	Water/WW	$180
Water Transmission and Distribution	10	Water	$180
Practical Personnel Management	7	Water/WW	$125
Water Utility Calculations	10	Water	$180
Pumps & Motor Maintenance	10	Water/WW	$180

By Todd Grinstead, Executive Director

From Your Executive Director

The 2021 Annual Technical Conference was held in mid-August at the Snowshoe Mountain Resort. The conference days were filled with many exciting events: golf outing, picnic, awards, competitions, training classes, and ever important networking with your fellow water and wastewater professionals.

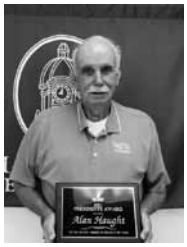
The opening session was kicked off by Keynote speaker, Mark Bowe, host of the DIY Network's Barnwood Builders. Mark entertained all with his story and witty sense of humor.

At the Board meeting held during the event, Board officers of the Association were elected. Eric Bennett was elected as your President, Brian Shade, Vice-president, and Porter Robertson was re-elected as your Secretary/Treasurer.

I would be remiss if I didn't mention the fun we had with "Rural Water Family Feud". It was such a good time filled with fun and laughter! It appeared everyone had a blast.

We are so very proud of the hard work and dedication of every professional within our industry. Many were recognized for their outstanding achievements during the "Awards of Excellence" presentations.

One unique award given this year was the President's Award. The President's Award is an award presented to an individual for outstanding commitment and dedication in serving rural West Virginia. This award isn't necessarily given out every year, and is only given to the most deserving induvial that has made a major impact in rural water.



This year, the President's Award was presented to Mr. Alan Haught of Harrisville, WV.

Alan has a long history serving rural West Virginia. He became Mayor of the Town of Harrisville in 1983, where he currently is the 14th longest setting Mayor in the United States. He currently serves the residents of Richie County as the Chairman of the Hughes River Water Board from its creation in 1998. Alan, also, is a longtime member of the WV Municipal League.

Alan sets on the West Virginia Rural Water Association Board, where he has mentored many members over the years, including myself. He has served many positions, including President for many years, and currently serves as the West Virginia representative on the National Rural Water Association Board.

For many years, Mr. Haught has led the Association in its vital legislative efforts in both West Virginia, as well as, on the National level. Alan has earned the respect of many high-ranking officials.

West Virginia is very blessed to have a person such as Alan to lead our efforts and work tirelessly for us all.

On behalf of all the Association Members, Board, and Staff, I would like to thank Alan Haught for his hard work, commitment, and dedication. ■

By Brian Arthur, 2% HELP Training Specialist

Taste and Odors: A Never Ending Problem

Turning your water tap on only to notice a terrible smell is one of the worst ways to start your day. When a customer encounters a smell from the tap, their immediate reaction is to assume that the water is contaminated, but there are many reasons why household water has suddenly developed an off odor.

Although bacterial activity is a common source of bad aesthetics, it is not the sole explanation for foul taste and odors. Changes in your water's taste and odor could be because of chemical characteristics, increased minerals, and/or organic material. Let us look at some of the most prevalent water quality problems, what causes them, and how to treat them.

Odor: Rotten Eggs

A lack of oxygen in a well creates hydrogen sulfide gas, which gives off the foul 'rotten egg' odor. It can occur in the groundwater as well as an outcome of sulfur-containing chemical reactions. Iron and sulfur bacteria use iron and sulfur in groundwater as energy sources and chemically modify sulfates to produce hydrogen sulfide gas.

These bacteria flourish in an iron-rich atmosphere and obtain sulfur from decaying plants, rocks, or soil.

It is worth noting that if a customer only encounters the odor when running hot water, it could be a chemical reaction taking place inside their water heater. Whether it's the customer's problem or the utility's, no one likes the taste or the smell.

Odor: Earthy or Dirty

You may be dealing with iron bacteria in your water supply if you experience a musty, earthy-smelling water. Though these bacteria are not harmful, they can be inconvenient since they impart a terrible taste. The customers may even find slime in their toilet tank or other plumbing in addition to the foul smell and taste. When iron and oxygen mix, iron bacteria develop. The bacteria feed on the iron and generate slime. When the bacteria die, they give off an earthy smell.

Iron bacteria are found in water wells with high iron levels. The water heater is typically the ideal growing habitat for iron bacteria due to its high temperature.

Odor: Fishy Smell

This odor generally indicates that water contains high concentrations of chloramines, barium, or cadmium. Chloramines are chlorine-ammonia compounds used to disinfect public water. While it is vital to eliminate contaminants, it may leave the treated water with a bad odor.

Barium and cadmium are naturally occurring metals that might enter your water by fertilizer contamination or corroding metal service lines and/or old iron plumbing lines. Although it seldom indicates the presence of hazardous bacteria or pollutants, the smell is unpleasant.

Odor: Bleach

This smell indicates elevated or low amounts of chlorine in the water, similar to the smell in swimming pools. Customers using public water are likely to complain about water that smells like bleach because chlorine is added to disinfect the water. The chlorine concentration in water is likely to be higher in homes closer to the plant or a booster facility. Also, these complaints come from customers who are located at dead end lines.

Chlorine is essential for water treatment, but once it reaches the customer's home it can and does cause customer complaints, such as, excessive dryness to the skin and the one operators hear all the time, "my water has a nasty taste and smell."

These are some, but not all of the aesthetic problems that operators deal with. The thing that matters most is that we know how to treat the water for these problems and how to answer our customer's questions.

How to treat for taste and odors?

The choice of an active treatment method for taste and odor problems depends on the cause of the problem. In addition, some methods can be used to solve other problems, such as disinfection-by-product (DBPs) formation, which should be factored into the choice of a treatment method. Active treatment may involve optimizing plant processes, air stripping, performing chemical or mechanical oxidation, or performing adsorption.

Optimizing Plant Processes

Chlorine smells are one of the most common problems reported by water customers and are also one of the simplest odor problems to treat.

Chlorine smells can be dealt with by simply optimizing the chlorine dosage.

If the tastes and odors are associated with color and turbidity or with algae, then optimizing the coagulation/flocculation, sedimentation, and filtration processes may take care of the problem. This is often the simplest and most economical treatment method for taste and odor problems since the equipment is already in place. In addition, these typical plant processes can remove disinfection-by-product precursors in many cases if pre-chlorination is not used at the treatment plant.

Air Stripping

Volatile compounds can sometimes be removed from water using aerators, which strip the compounds from the water. This technique is usually more helpful at controlling odors than tastes, and is very effective at removing hydrogen sulfide. DBPs can be removed from water using aeration if the aeration follows chlorination. However, in that type of setup, the operator must be aware that passing air through treated water can add contamination back into the water.

Oxidation

Oxidation is another frequently used method to remove tastes, odors, and DBP precursors. Oxidation can be either mechanical (using an aerator) or chemical (by adding chlorine, potassium permanganate, ozone, or chlorine dioxide.) Use of aerators is usually only effective at removing tastes associated with iron and manganese. In other cases, chemicals must be used.

Chlorine is the most widespread chemical used for oxidation of tastes and odors since chlorine is already in use in many treatment plants as a disinfectant. Chlorination can deal with fishy, grassy, or flowery odors and with iron and hydrogen sulfide. However, chlorination can make some problems worse, especially those caused by phenols. And, of course, chlorination will increase the disinfection-by-product concentration.

Other chemicals used for oxidation include potassium permanganate, chlorine dioxide, and ozone. Potassium permanganate is used to treat organic contaminants while chlorine dioxide does well against phenolic and algae tastes. Ozone is a very strong oxidant which will treat more problems than chlorine and lacks the objectionable by-products. All of these methods can also be used to remove or modify DBP precursors, but with variable efficiency.

With regard to chemically treating water for odor and taste problems, oxidants such as chlorine, chlorine dioxide, ozone, and potassium permanganate can be used. These chemicals are especially effective when water is associated with an earthy or musty odor caused blue-green algae. Tastes and odors associated with dissolved gases and some volatile organic materials are normally removed by oxygen in aeration processes.

Adsorption

The final treatment method we will discuss is adsorption. The most widespread of these materials is activated carbon, which is formed when carbon from wood, coal, peat, or nut shells is exposed to heat in the absence of oxygen.

Types of Activated Carbon

Powdered activated carbon, or PAC, is a form of activated carbon with a very small particle size. Treatment involves adding PAC to water, allowing the PAC to interact with contaminants in the water, then removing the PAC by sedimentation or filtration.

The feed location of PAC can be at any point prior to filtration. The most common locations are in the flash mixer or flocculator since these pieces of equipment will mix the PAC into the water very well. However, some plants feed PAC just before filtration so that the PAC will form a layer on top of the filter and ensure that all water comes in contact with the activated carbon.

Granular activated carbon, also known as GAC, has a larger particle size than PAC with an associated greater surface area. Like PAC, GAC can remove disinfection-by-product precursors as well as taste and odor compounds. GAC is used as a filter medium, either as a layer in a multi-media filter or in a separate filter.

GAC and PAC each have advantages and disadvantages. In general, PAC is used more often due to the low initial cost and to the flexibility of dosage which allows the PAC concentration to be adjusted to deal with changing contaminant levels. However, PAC has a high operating cost if used continuously, cannot be regenerated, produces large quantities of sludge, and can break through filters to cause dirty water complaints by the customers. In addition, the dust resulting from the small particles of PAC make handling difficult, as does the flammability of the particles.

GAC becomes a more economical choice in larger systems or where taste and odor must be controlled continuously. Disadvantages of GAC include a high initial cost.

Taste and odors will always be a problem that operators have to deal with, but with training and implementing the proper techniques and treatments these problems can be resolved. See you in class! ■

By Bertis M. McCarty, Water Circuit Rider

Communication

The dictionary explains communications as *"a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior."*

The above nationwide, public relations campaign was designed especially for the drinking water industry in 1996. Quality On Tap (QOT) is recognized around the country by every water operations specialist, regardless of their years of service to the industry.

"Quality On Tap – Our Commitment, Our Profession"

Our communications, as an industry should not be limited to reports generated for the sole purpose of fulfilling requirements set by our state primacy agency. There needs to be more outreach to our local communities about who you are and what you do to keep quality water flowing to every tap. The inexpensive cost should be compared to everyday items like gas, milk, coffee, or soft drinks.

I know there are quite a few communities in my area that publish a monthly or quarterly newsletter and this would be a great place to dedicate half a page to educate the public on the hard work the town's water professionals do. This is just one place to communicate with the public. Bills, websites, Facebook, and open house visits are a few other suggestions.

The current public opinion of water systems in our country was demonstrated during the recent Covid-19 Pandemic. Potable water and the specialists that make it possible to turn on a faucet and receive quality water were in the background and ignored, as it always is. ***The quality potable water continued to flow and assist all the medical facilities to perform their valuable and essential services. This proves the fact that water operations specialists are one of the most valuable assets in our country. Without the quality water provided, it would have been much worse than anybody knows.*** This is a problem that needs to be fixed with public education and communications. The idea that a person doesn't realize that local water professionals exist, except when they are inconvenienced from a water outage due to a water leak on the aging infrastructure is unacceptable. Let people know the age and condition of your infrastructure.

According to the US EPA, more than 97% of the nation's **156,000** public water systems are small systems, meaning they serve 10,000 or fewer people. They have also stated that about 91% of community water systems meet EPA guidelines daily. With this record, they calculated that a person has a 1 in 290,000 chance of getting a disease from a water-borne illness in the US. This number is substantially larger in other countries around the world.

A WATER OPERATIONS SPECIALIST IS A UNIQUE AND GENUINELY DEDICATED PROFESSIONAL WHO DESERVES TO BE COMMENDED FOR THE HARD WORK THEY DO

We NEED to bring our occupation
OUT OF THE DARK
and
INTO THE LIGHT

I ran a few statistics you might be able to use in your communications, other than what's already been mentioned.

Retail cost of water to the public ranges from $0.01 to $0.03 per gallon.

When we compare this to common items people purchase every day, everyone can see the actual cost of water is very *inexpensive*. (Cold drinks from the convenience store listed.)

Price per Gallon	
Starbucks Coffee	$27.60
Gasoline	$3.05
Milk	$3.50
Coke	$13.38
Bottled Water	$11.33
Orange Juice	$21.23
Energy shot	$65.28
Bar Liquor	$512.00

I looked at Annual reports on the WV PSC website and pulled these statistics from system sizes ranging from 550 to over 25,000 system connections.

Miles of underground water lines range from 23 to 444. Let the customers know what you keep maintained daily. They truly think at this time, you just run around in a pickup truck to see the sites or spot a nice buck in the fall. Don't tell me you haven't heard that one before.

The WV systems I looked at average about 30 mainline leaks per 100 miles every year. The corrective hours for these repairs add up to about 7,719 hours with a cost of around $3,444,000.

These statistics are on every annual report and can be researched for your system. If the public knew how hard you work and how much time you spend to keep the water flowing in their house faucet, they might look at you differently.

Dress Code---

If you want to be looked at as a professional, you must dress like one. Uniforms are a must for all field staff. If your system doesn't have a dress code, it's time to get one made up and approved. If you need picture IDs, contact your local Circuit Rider and he or she will set you up with them.

Labeling---

During the 2021 WVRWA Annual Conference, a new game was introduced and played for entertainment purposes. It was "Family Feud" for the staff and management of the WV water and waste utilities. There was a great time had by all who stayed to watch and participate. During the game, there was a question asked about naming a job title for our industry. One of the answers was "Operator." For our industry to move forward and to be looked at by others as the professionals we are, we must start by using a more suitable name for ourselves like "Operations Specialist." Whenever I help a system set up a website, I will give the titles of each job a facelift and there is always a positive reaction to the titles I use. This is what we need to do in everyday life as Operations Specialists. (i.e. – The operator would be Operations Specialist. The word Specialist can also be preceded by Chief, Water, Wastewater, Distribution, Meter, or Billing.)

Training---

Communicate the training it takes to become the professional you are and the thousands of hours it takes to get the license to do your job. The hours of continued education required to keep your license is also something the general public knows nothing about. Sometimes, the town council or board doesn't even know about these things.

If you don't get this started for your industry, then it will never happen.

Pat yourself on the back and get it started today! ■

NATIONAL RURAL WATER ASSOCIATION

NRWA *America's Largest Utility Membership*

NOW IS THE TIME TO ACT

Get Started on Your Water Utility Construction Project

Do you have a Water Utility Construction Project? Now is the time to act! Rates are at an all time low, and with the current pricing being opportunistic and taking action can result in benefits not only for your-self but for the customer as well. Consider the below items that detail positive reasons to act now that you can present to your governing body.

- 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.

USDA

USDA Rural Development is committed to helping improve the economy and quality of life in rural America. Offering loans, grants and loan guarantees are some of the ways Rural Development is supporting rural America.

WEST VIRGINIA RURAL WATER ASSOCIATION

Every drop counts.

By Daniel Vestal, ARC Specialist

System Awards

Two small water systems from southern West Virginia recently received awards that we would like to mention.

Town of Clay Water received **Drinking Water Performance Gold Award for 2020 Overall Most Improved Surface Water System** in the WVBPH – OEHS – EED St. Albans District. Based upon treatment performance, violation history, and sanitary survey deficiencies.

The young lady pictured is Drema Thomas, Chief Operator for the Town of Clay.

Drema started with the town on July 2, 2002 working in the office, reading meters, and signed up as Operator-In-Training. She passed Class 2 Water and received her license in 2005. She then became the Chief Operator in 2006 and things have never been the same. With 19 years in the business of producing safe drinking water, Drema runs a tight ship, and if you think this is the only award that the system has received, you would be wrong.

2007 - the system was the Most Improved Overall Area Wide Optimization Program – WVDOH – USEPA

2007 - Most Improved from St. Albans.

2009 - Third Most Improved Surface Water – St. Albans

2010 - Recognition Award for Efforts Taken to Protect its Source Water.

If you see Drema out and about, take the time to congratulate her and thank her for doing such a great job of keeping your drinking water safe and tasty.

Buffalo Creek PSD Water received **Drinking Water Performance Silver Award** for being 1st Runner Up for **2020 Overall Most Improved Surface Water System** in the WVBPH – OEHS – EED St. Albans District. Based upon treatment performance, violation history, and sanitary survey deficiencies.

The gentleman pictured is James Deel, Chief Operator for Buffalo Creek Public Service District.

James started his career in water at Buffalo Creek PSD in July of 1978 and became Chief Operator in 1986. He continued working there until October 1994, when he went to work for the Town of Gilbert as their Chief Operator.

While at the Town of Gilbert, the system was awarded the Most Improved Surface Water System for 2010.

James runs a tight system and has an excellent assistant operator in Dana Wilson. He and Dana keep the Buffalo Creek Public Service District water safe to drink and use.

If you see either of them out and about, take the time to congratulate them and to thank them for a job well done!

If your system receives an award and you would like to see your operators receive the recognition they deserve, contact your local West Virginia Rural Water Association Circuit Rider, Wastewater Technician, or ARC Specialist.

To ALL WATER AND WASTEWATER OPERATORS, WATER DISTRIBUTION, COLLECTION SYSTEM, and FIELD WORKERS: **THANK YOU SO VERY MUCH FOR ALL THAT YOU DO!!!** ■

Thank You Letters

Town of Elizabeth

73 Town Hall Lane ~ P.O. Box 478 Elizabeth, WV 26143
Phone (304) 275-3200 Fax (304) 275-3038

Mayor: Bobbi Moore ~ Alderman: Judith Matheny
Council: Paul Russell ~ Douglas Hill ~ Jeremy Smith ~ Pam Nicolais ~ Elise Sheppard
Clerk/Recorder: Brenda Evans

August 23, 2021

West Virginia Rural Water Association
100 Young Street
Scott Depot, WV 25560

To Whom It May Concern;

The Town of Elizabeth would like to take this opportunity to say a huge thank you to Rural Water and especially Mr. Mike Hersman and Mr. Jim Johnson for the service they provided to the Town.

Mr. Hersman stopped by Elizabeth last week as part of his circuit to see if he could be of service to us, we immediately put him to work helping us locate a leak.

This week Mr. Johnson was here to assist us with some camera work in our sewer system. Both of these gentlemen provided us with answers that we needed, and were hard pressed to get otherwise.

As always, we are impressed with the circuit riders expertise, knowledge and willingness to help. We use your services for both our water and wastewater systems, we feel this is a very valuable resource to small departments such as ours and indeed value these services very much.

Again thank you for the service and your time.

Brenda Evans

Brenda Evans

Chief Operator

Dale Clark

Dale Clark

Field Supervisor

JANE LEW PUBLIC SERVICE DISTRICT
P.O. Box 845
Jane Lew, WV 26378
Phone 304-884-7111 / Fax 304-884-8922

September 28, 2021

Mr. Todd Grinstead , Executive Director
West Virginia Rural Water Association
100 Young Street
Scott Depot, WV 25560

Dear Mr. Grinstead,

I am writing to tell you how much the employees and board of the Jane Lew Public Service District appreciate the various kinds of work and help given us by our water Circuit Rider, Bertis McCarty.

Recently, Bertis came to our District to help us with testing our large meters. Testing of large meters is something that sometimes does not get done according to the PSC rules due to the fact that it is expensive to have done by a certified company and therefore gets pushed back for more years than is allowable by the PSC. Our field staff could not have tested these meters without his expert help. He also made time while he was here to help the Office Manager update our Website.

Bertis has been very helpful numerous times in the past with leak detection, assistance with BPH forms and reports, as well as other aspects of our utility. He often attends our board meetings where his thoughtful input about industry matters is actively and specifically sought.

Bertis McCarty is and has been a great asset for the Jane Lew Public Service District, and we are thankful that he is our Circuit Rider. Moreover, we are grateful for everything the West Virginia Rural Water Association does for the small utilities of the state, and it is our pleasure to have been a supporting member of your organization for many, many years.

Thank you, again.

Sincerely,

Nancy E. Gee

Nancy E. Gee
General Manager

Jane Lew Public Service District is an Equal Opportunity Employer and Provider of Water and Wastewater Services.
Complaints of discrimination should be sent to: USDA, Director, Office of Civil Rights, Washington, DC 20250-9410

By Shane Altizer, Water Circuit Rider

Introduction of WVRWA's Newest Circuit Rider

My name is Shane Altizer, and I am the newest Circuit Rider for West Virginia Rural Water Association. I started working in the water industry in 2006 as an OIT. Like most water operators, I never dreamed of becoming a water plant operator, but it became something I really enjoyed doing. I worked for 15 years at a ground water plant, eventually becoming Chief Operator. While my main job was to run the plant, I also was in charge of reading meters, locating and repairing leaks, installing new connections, and anything else that was required in the field.

When I'm not working, I enjoy the outdoors and spending time with the family. We like camping and boating during the summer as well as fishing and hunting. I have a 2-year-old boy who is wild, so he keeps everything we do outside of work interesting.

My first experience with WVRWA was with Mike Hersman. While working for the local plant, we had a leak we couldn't pinpoint, and Mike came with correlators to help. After seeing what he did, working for WVRWA became a dream of mine that I never thought I would have the opportunity to fulfill. The last 3 months have been a great experience. I look forward to helping you out any way I can. My focus as a circuit rider is to help more with the administrative aspect of things such as rate studies, Emergency Response Plans, and helping systems with financial difficulty. However, if you need assistance with anything, don't hesitate to contact me at 304-660-8644 or shanealtizer@wvrwa.org. ■

By Michael Hersman, Water Circuit Rider

Causes of Distribution System Taste and Odors

Tastes and odors detectable by the consumer are a common indication of a loss of water quality integrity. In fact, consumers may only complain about the loss of water quality if they detect taste and odors. There are methods to determine possible sources within the distribution system and customers premises.

Because drinking water contains a total chlorine residual, the taste and odor of tap water might be described as "chlorinous." Whether it is noticeable to the public depends on the chlorine species present, the concentration of the residual, and the temperature of the tap water. Other causes of taste and odors in drinking water are usually metals, volatile organic chemicals, and microbial activity, with the latter being the most prevalent. Volatile organic compounds (VOCs) in biofilms within the distribution system can cause taste and odors. Bacteria such as actinomycetes can give rise of geosmin, and other microorganisms such as certain fungi have been associated with consumer complaints about taste and odor.

Much of the biological activity that cause taste and odor problems is indirect. Taste and odor problems may arise as a result of bacterial processes in certain types of pipes, such as iron, copper, and lead. In water systems with chlorophenols or bromophenols, biological activity (particularly fungal) can convert these compounds to very odorous chloro/bromo-anisoles that have much lower thresholds of odor detection than the original compounds. It is also possible that other chlorinated and oxidant-derived byproducts can be produced or allowed to increase in the distribution system to the point where they begin to become detectable by customers. Finally, if source water contributes sulfur or iron to the distribution system, biological activity in the distribution system can produce compounds that change the taste of the water.

Taste and odors may be associated with external contamination events, such as permeation and intrusion. Among the compounds most likely to present a taste and odor problem stemming from an external contamination event are gasoline additives or constituents, soluble components of soil, and compounds found in sewage.

Changes in taste and odor can occur anywhere in the distribution system that the chlorine residual deteriorates and the water becomes stagnant, such as in storage tanks, at dead-end water mains, and behind closed valves. Also in stagnant areas of the distribution system where corrosion conditions release iron into the water, the iron may be detected by customers both visually and by taste. Interestingly, most nuisance tastes and odors that cause customer complaints originate within customers' premises (except those that come from source water). Common causes are stagnant plumbing (musty odors from biological growth), backflow events, hot water heater odors, and corrosion of plumbing materials. New plastic pipe can leach odors for a period of time.

Within the main distribution system, new pipe and facilities need to be checked for their contributions to potential off-odors before they are released for use. Ductile iron pipe that is lined with cement-mortar might have an asphaltic coating that can leach volatile organic chemicals into the water if it has not cured sufficiently. New pipe joint lubricant can also impact aldehyde-type odors to the water. New linings of storage tanks also need to be cured adequately before being placed into service.

Finding the source of distribution system taste and odors can be difficult. The location of the complaint (whether a single resident or from a section involving several residences) will determine how it is investigated. Sampling and good record keeping can aid the utility determining the source. ■

By Jerry Dotson, Sourcewater Specialist

WV Department of Health and Human Resources Update on Source Water Protection Plans, Operator Certification, and Training Programs

The WVRWA 2021 Annual Conference was fortunate to have Brian Carr, P.G. and Reuben Gillispie from the West Virginia Department of Health and Human Resources, Bureau for Public Health, Office of Environmental Health Services, Environmental Engineering Division as presenters for the session on Knowing Your Source Water Protection Plan, Operator Certification, and Training Programs. Brian Carr is the Unit Manager over all the programs mentioned in that title. Reuben Gillispie is the Assistant Unit Manager with a special emphasis on source water protection.

Their unit is responsible for the certification and training of over 5,000 professionals in West Virginia who work with water and wastewater systems, well drillers and pump installers, and backflow preventor assembly inspectors and testers. Certifications must be renewed every two years. Patrick Marchio is responsible for drinking water, while Becky Payne oversees wastewater. Certification expiration dates that were extended due to the COVID-19 pandemic to July 31, 2021 have been pushed forward an additional 90 days to October 31, 2021 to provide additional time for licensees to obtain CEHs. This is the last extension that should be anticipated. Operators have had ample opportunity to obtain the necessary CEHs to renew their licenses. Licenses that had expiration dates extended due to COVID-19 are now due to expire on October 31st, 2021. **It is your responsibility to meet the renewal requirements and submit the renewal application 30 to 60 days prior to the expiration (by September 30, 2021)**. Payment for renewals now have the option to be paid on-line by credit card, which will include a credit card fee. However, if you intend to use the on-line payment option, do not make the payment at the time you submit the application. Wait until the application has been reviewed and approved by Certification and Training Personnel, then go on-line again to submit the payment. The Health Department will attempt to send a renewal notice to the licensee 90 days prior to expiration, so it is important that your contact information and mailing address is correct in their files, otherwise you may not receive the renewal notice and other important correspondence.

Operator Renewal Requirements:

Certifications are renewed every 2 years using DHHR form EW-212.

Operators with both Water and Wastewater Cert. must have all approved CEHs for both.

Certification renewal requires DHHR approved Continuing Education Hours (CEHs).

Drinking Water	CEHs	Wastewater	CEHs
Operator in Training (OIT)	6	Operator in Training (OIT)	6
Water Distribution	6	Class S	3
Class I	12	Class C	6
Class II	24	Class I	12
Class III	24	Class II	12
Class IV	24	Class III	24
		Class IV	24

The Certification and Training Program is charged with administering the legislative rules as part of the state drinking water program. The official source for state regulations governing these certifications and the operation of water and wastewater systems can be found at the State Attorney General's website at Apps.sos.wv.gov. Rule 64CSR04 covers drinking water and 64CSR05 covers wastewater. The water or wastewater system owner's responsibilities include employing a chief operator, ensuring that the system employs the proper number of adequately certified operators, and ensuring that the system is functioning properly. The chief operator must hold a certification at the same or higher class as the system's certification. The operator's responsibilities include running the plant, maintaining the system components, and ensuring that the system remains in compliance with all state laws, rules, and regulations.

WV Source Water Protection Plan History

WV Source Water Protection Plan History

Well Head Protection Program	SDWA Surface Water Protections	DHHR Source Water Protection Plan	Voluntary SWAP by PWS	Elk River Chemical Spill SB373	125 SWPP Received and Approved	3 Year Update Plus 19 SWIG SWPP Received and Approved	Future SWPP Updates Due According to Staggered Schedule
1986	1996	1999	2000	2014	2016	2019	2021-2024

Well Head Protection ProgramSDWA Surface Water ProtectionsDHHR Source Water Protection PlanVoluntary SWAP by PWSElk River Chemical SpillSB373125 SWPP Received and Approved3 Year Update Plus 19 SWIG SWPP Received and ApprovedFuture SWPP Updates Due According to Staggered Schedule1986199619992000201420162019 2021-2024

The general responsibilities for the WVDHHR Source Water Assessment and Protection Program include monitoring and maintaining PWS Source Water Protection Plans, managing the Source Water Protection Grants Program, managing the Well Head Protection Program along with the well head protection areas (GWUDI and SWIG classifications), and management of Geographic Information System data and sharing it with PWSs and other government agencies.

The WV Source Water Assessment and Protection Program is legislatively mandated by WV Code §16-1 and Code of State Rules (CSR)§64-3.

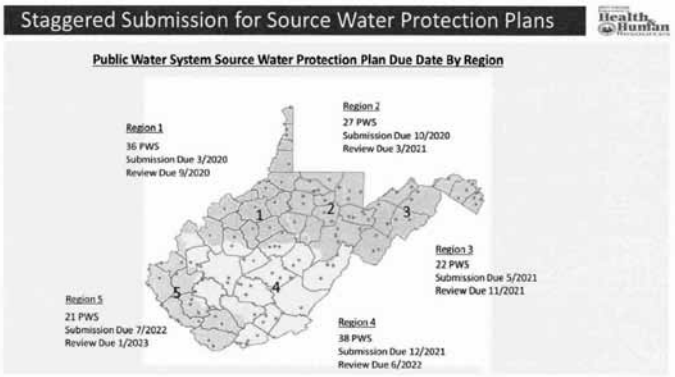
• §16-1-9c.(a)An existing public water utility that draws and treats water from a surface water supply source or a surface water influenced ground water supply source shall submit to the commissioner an updated or completed source water protection plan for each of its public water system plants with such intakes to protect its public water supplies from contamination.

• §64-3-14.10. Any public water utility required to file a complete or updated plan in accordance with the provisions of this rule shall submit an updated source water protection plan at least every three years or when there is a substantial change in the potential sources of significant contamination within the identified ZCC.

In 2019, the Source Water Assessment and Protection Program introduced HB2612 to the WV Legislature to enact staggered submission dates for SWPPs.

• HB 2612 passed in February of 2020 and 64CSR3 was amended in April of 2020 to allow SWPP submission dates to be staggered according to the five watershed districts defined in CSR §64-3-16, provided they are still updated every 3 years.

Map of due dates of Watersheds for Source Water Protection Plan updates. Going forward, updates are due every three years using these same month and day dates.



There are several parts of a source water protection plan that are mandated by the legislation. The system is required to develop a contingency plan in response to contamination. The ability to isolate or divert source water in case of an emergency must be explored. The effectiveness of these contingencies should be tested through tabletop exercises. The amount of raw water storage, the amount of time the source can be isolated, the ability to close off a source and how long it can be isolated, and the ability to switch to an alternative source must all be explored. The plan must include the hours of operation and amount of water produced (average, minimum, and maximum daily). The utility's finished water storage capacity must be included. Water loss and measures to reduce unaccounted for loss need to be reported. The plan must include exploration of alternative sources and interconnects to provide back up water during an extended outage. A list of Potential Sources of Significant Contamination and a management plan to protect against those sources of contamination must be provided. And each time the plan is updated, the system is required to hold a

public meeting prior to submitting the plan for approval to allow interested parties to provide input about the plan.

The Source Water Protection Plans and updates can be submitted through the on-line application. The system must obtain an access login from the WVDHHR prior to using the application. The application provides the watershed boundaries, as well as the delineation for the zone of critical concern, zone of peripheral concern, and well head protection areas. The watershed comprises the entire surface drainage area above the intake. The Zone of Critical Concern (ZCC) is based on a modeled 5-hour travel time with a 1,000-foot buffer on the main stream and a 500-foot buffer on its tributaries. The Zone of Peripheral Concern (ZPC) is based on a modeled 5-hour travel time above the ZCC with a 1,000-foot buffer on the main stream and a 500-foot buffer on the tributaries.

The OEHS Portal utilizes ArcView Geographic Information System (GIS) along with ESRI as a framework for gathering, managing, and analyzing data. The GIS integrates many types of data organized in layers. Spatial locations logged by Latitude and Longitude allow information to be viewed in the map. System information can be looked up by either System Name or Public Water System Identification Number (PWSID). System information appears in a dialog box and the delineation areas appear on the map. Attribute tables provide details about the information on the map including Potential Sources of Significant Contamination (PSSCs) that can be used to identify permitted sources within the protection area that are included in the source water protection plan. A confidential map portal is available, after executing a confidentiality agreement, that allows PWSs to identify Aboveground Storage Tanks (AST), Underground Storage Tanks (UST), leaking USTs, and USEPA Tier II sites within their protection areas. Specific of Tier II sites must be obtained from the WV Department of Homeland Security. All of this information is available to utilities, but must be kept confidential. Utilities are required to provide public access to source water protection plans, so a redacted copy should be kept with all confidential information blacked out for the public to view upon request.

Well Head Protection Areas (WHPA) for groundwater supplies are also included in the OEHS Portal. A WHPA is normally represented as an area from which water could flow to the source within a 5-year time of travel. However, some systems use other delineation methods to establish WHPAs.

Ground Water Under Direct Influence (GWUDI) is water beneath the surface of the ground with significant occurrence of insects or other macro-organisms, algae, or large diameter pathogens such as Giardia lamblia or Cryptosporidium, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions (40 CRF 141 definition).

Surface Water Influence Groundwater (SWIG). "Public surface water influenced groundwater supply source" means a source of water supply for a public water system which is directly drawn from an underground well, underground river or stream, underground reservoir or underground mine, and the quantity and quality of water in that underground supply source is heavily influenced, directly or indirectly, by the quantity and quality of surface water in the immediate area.

The GWUDI designation has been with us for a long time, but the SWIG designation is a product of the spill bill created in response to the Elk River Chemical Spill. Floodplain alluvial aquafers, Raney well intakes, karst aquifers, and abandoned coal mine aquifers are highly productive sources of drinking water. While many of these sources have been through GWUDI tests and passed, they are highly susceptible to chemical contamination and will most likely be examined to determine if they qualify as SWIGs in the future.

For information on any of these programs or other water and wastewater related questions, the Source Water Assessment and Protection group of the WVDHHR can be reached at 304-352-5003 or 304-352-4996. ■

By Jim Johnson, Wastewater Technician

Would Smoke Testing My Sewer System be Benificial

The purpose of smoke testing is to identify sources of inflow and infiltration in a wastewater collection system. If the I&I is not found and repaired, it will seriously affect the efficiency of the wastewater plant. Some of the problems excessive I&I may cause are:

- Pump Station handling too much flow
- Hydraulic overloading causing a reduction in system efficiency
- Increased operating cost due to treating too much storm water
- Extra wear and tear on the equipment
- Need for extra maintenance on the collection system

One factor to consider when determining if smoke testing would be beneficial to your facility is the age of your system. In our state, some of the materials will be more than 50 years old and would be very outdated. Over time, problems begin to develop that may make replacement a more cost-effective option than repair. Still, it will be beneficial to know where the problem areas lie.

Smoke testing is a quick way to determine if buildings and homes are properly connected to the sewer system. When doing a smoke test, you should see the smoke exiting the vent pipe that is located on top of each building or home. If the smoke enters a structure, it is an indication that sewer gases may also be entering the building. If smoke should enter a building, it could cause the occupants to become panicked. Make sure to notify the public when smoke testing will be done in their area. This can be done with door hangers or through a note on their utility bill. Make sure to inform the occupants of the importance of correcting the problem. Let them know that if smoke can get in their building, dangerous gas can enter, as well. Let them know that the smoke is not dangerous, but that sewer gas is. Let them know that some of the sewer gases have no smell, but may still be harmful. These sewer gases can cause minor illness, such as headaches, and even more serious consequences, such as death. Identifying and correcting the source of the smoke needs prompt corrective action. If it is properly handled when smoke enters a building, the occupant is usually grateful in the end for the knowledge and assistance provided by system personnel.

There are many reasons smoke could enter a building including:

- The traps for sinks, tubs, and showers are missing, defective, or incorrectly installed
- The vents to the building's laterals are missing, defective, or incorrectly installed
- The pipe connections and the building seals are defective, damaged, or improperly installed

Smoke testing provides a rare opportunity to become more familiar with your particular collection system. Smoke testing is accomplished by placing a blower over any manhole you want to conduct a smoke test on. The smoke will be produced by lighting a smoke candle or, in most cases, using liquid smoke. The smoke blower will be started, and the smoke will be forced through the pipes. It will also follow the path of any leak to ground. It will also be forced into the piping of any building in the area. If the home is plumbed correctly, the smoke will exit the vent pipe. You will want to let the smoke run long enough for your staff to visually inspect the area. Sometimes they may need to get a few photos and take some notes. Try to have at least two people doing the visual inspections. It is nice if you can leave a person with the smoke blower in case you encounter a problem there. Check the area well, including the ground and all buildings. Do not rush. Check around the houses, including paved, gravel, and grassy areas. Take a photo of any area that is smoking that should not be. It is

best to conduct smoke testing on a dry day because, if the lines are full of water, it could form a barrier that smoke cannot pass through.

Before beginning the smoke test, you should have a pretty good idea of which manholes you are going to test. Try to get a good representation of the area to be tested so you can include everything you need to. Try to choose manholes with a lower traffic flow if possible. Inform emergency services so if they get a call for smoke in a building, they will know ahead of time there is a good chance it is the system doing the smoke test. Also let them know what street you are on in case there would be another emergency in that area.

The smoke testing results should be put into a report that summarizes the project. Include the pictures and any notes that were taken. Send a letter to any property owner that needs to do any repair work. Ask them to report to you when the work is completed. If there is a sewer use ordinance that is being violated, then site that. Also site the possible safety concerns for their noncompliance. Offer to give them advice on repair methods and such to get the work completed. You may also provide them with a phone number or email address. Try to do a follow-up inspection to see if the repairs were made. Be sure to set a time frame as to when the repairs need to be completed.

It is very important to get all the rainwater and storm water you can out of your system. Smoke testing is one of the best ways to find this storm water. ■

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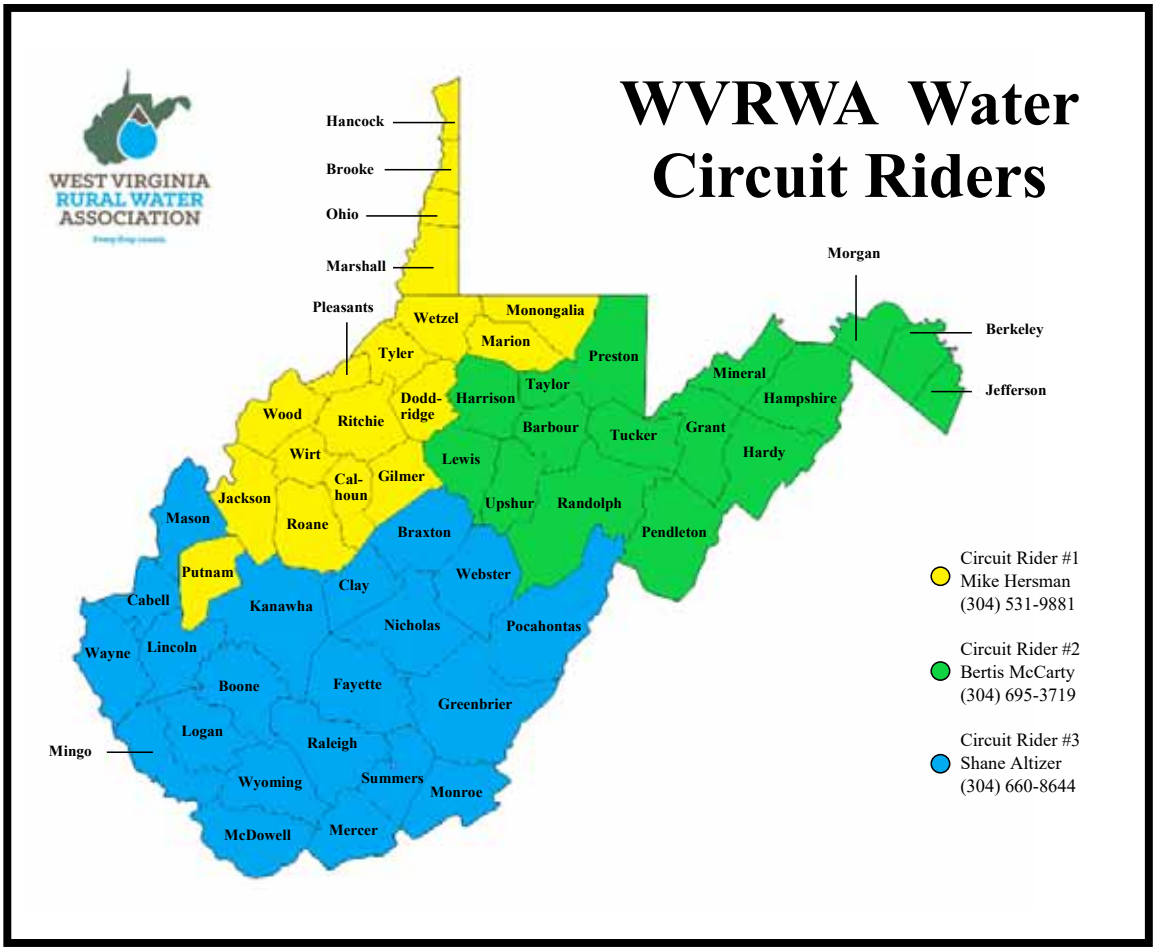
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WW Circuit Rider #1
Jim Johnson
304-704-3830

RURAL WATER Loan FUND

The **NRWA Rural Water Loan Fund** (RWLF) is a funding program specifically designed to meet the unique needs of small water and wastewater utilities. The RWLF provides low-cost loans for short-term repair costs, small capital projects, or pre-development costs associated with larger projects. The RWLF was established through a grant from the USDA/RUS, and repaid funds used to replenish the fund and make new loans.

Reasons to apply

- Reasonable interest rates
- NRWA does not charge administrative or processing fees
- Straightforward application process
- Quick turnaround

Eligible Projects Include

- Pre-development (planning) costs for infrastructure projects
- Replacement equipment, system upgrades, maintenance and small capital projects
- Energy efficiency projects to lower costs and improve sustainability
- Disaster recovery or other emergency loans available

Contact your State Rural Water Association or National Rural Water Association for help with the application process.

For More Information:

Applications, information and forms can be downloaded from the NRWA website, **www.NRWA.org/loans**.

Email applications to:
nrwarwlf@nrwa.org

Or mail to:
Rural Water Loan Funds
2915 South 13th
Duncan, OK 73533

For help, please call 1.800.332.8715 or email nrwarwlf@nrwa.org.

USDA Rural Development

NRWA

National Rural Water Association working in conjunction with US Department of Agriculture/ Rural Development

Recently, WVRWA published its new e-Newsletter, *News Droplets*. *News Droplets* provides information on new programs and benefits, training classes, conference, legislative news, and much more. If you are currently not receiving *News Droplets*, but would like to, please send your name and email address to connect@wvrwa.org to be added to the mailing list.

By Beth Fletcher, Wastewater Technician

WVRWA Introduces Its Newest DEP Wastewater Technician

Hello!

My name is Elizabeth "Beth" Fletcher and I am pleased to introduce myself as the new West Virginia Wastewater Technician for WVRWA. I am new to this position, but not to the wastewater field. With over 13 years of experience in two different facilities, I am proud to hold a class IV Wastewater Operators Certification and a Wastewater Laboratory Technician Certification.

As for most of us, I did not grow up dreaming of becoming a wastewater operator, but I am truly happy to say I found my passion in this rewarding career. I started out working my way through college as part-time office help in my hometown water office where I earned my Wastewater Laboratory Technician Certificate in order to be eligible for a full-time opening the city had. After being hired into that position, it didn't take long for me to drive the plant operators crazy with a million questions of how and why everything in the plant did what it does. With their support and encouragement, I begin working towards my operator's certificates.

After taking a few years off to raise my daughters, it was time to go back to work outside the home. I was ecstatic to be offered a Chief Operator position of a smaller facility than I had begun in. It was here that I got to step back in time and operate an older plant that had not been updated since it was brought on line in 1984. I learned a lot in my time at this facility and I am so thankful for that experience as plants are moving into the technological future.

I find the process of treating sewage absolutely fascinating. Each facility is like a science experiment, all doing the same job just in a slightly different way. My focus is to offer my knowledge and assistance at facilities needing help with violations and compliance issues, but I am also excited for the opportunity to learn about the diversity of facilities in our state and to learn new things from fellow operators, as well. I am here to offer assistance throughout the whole state, so please reach out to me with any questions or issues you may have or just to invite me for a tour of your facility. I am here to help and hope we can learn from each other.

Cell: 304-771-4081 Email: elizabethfletcher@wvrwa.org ■

SUDOKU PUZZLE

				9	4			8
					1	5		7
	8	7						6
2	4			7		8		3
6		5				7	9	4
7								
8	2	4		6			5	
			4		3			
9		3			8			

The aim of the canonical puzzle is to enter a numerical digit from 1 through 9 in each cell starting with various digits given in some cells (the "givens"). Each row, column, and region must contain only one instance of each numerical. Completing the puzzle requires patience and logical ability.

Answers can be found on page 38.

We're on the Web!

For the latest information on what WVRWA is up to, follow us on Twitter, Facebook, & Lindedin

- Twitter: WV Rural Water
- Facebook: WV Rural Water Association
- Linkedin: West Virginia Rural Water Association

Answers to Soduko Puzzle

3	5	6	7	9	4	1	2	8
4	9	2	6	8	1	5	3	7
1	8	7	2	3	5	9	4	6
2	4	9	5	7	6	8	1	3
6	3	5	8	1	2	7	9	4
7	1	8	3	4	9	2	6	5
8	2	4	9	6	7	3	5	1
5	7	1	4	2	3	6	8	9
9	6	3	1	5	8	4	7	2

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2021 Awards for Excellence

OFFICE MANAGER OF THE YEAR

Kimberly Benson

Kimberly Benson is the Office Manager of the City of Ravenswood. She has worked for the City of Ravenswood and held the position of Office Manager for 10 years. Within the past year, the City of Ravenswood has embarked upon projects for both water and sewer and Kim has spearheaded all the necessary steps for both projects. She is very innovative, never afraid of change, and a person one can always count on. She loves her community and tries to always do what's best for the citizens while keeping the best interest of Ravenswood in the forefront.

ROOKIE OPERATOR OF THE YEAR

Kayleen Sears

Kayleen Sears works for the City of Elkins. She is relatively new to the wastewater field, having only been in the business for over a year. Kayleen takes care of the Wastewater Laboratory for the City of Elkins Wastewater Treatment Plant. The lab at Elkins does laboratory samples for their own plant plus several customers. Kayleen came into the field and passed her Class I Wastewater certification in about 3 months. She is doing an excellent job at the Elkins lab.

2021 Awards for Excellence

WATER OPERATOR OF THE YEAR

Chris Styer

Chris Styer is the Superintendent of the Harpers Ferry Water Works. Chris has worked with Harpers Ferry Water Works for 10 years and has held the position of Superintendent for a year. His professionalism, knowledge, and top-notch management skills have made him a valuable asset. In the past year, he has implemented a number of changes to improve system operations. Chris is dedicated to his job and believes his primary responsibility is to provide clean drinking water to the Harpers Ferry Water service area.

WATER SYSTEM OF THE YEAR

Harpers Ferry Water Works

Harpers Ferry Water Works has been in operation since 1985 with approximately 812 customers served. Over the years, Harpers Ferry Water Works has made progress in improving its system. Construction is currently underway for a major treatment plant upgrade. They are on track to becoming one of the first Source Water Protection Communities. Harpers Ferry Water Works has gone to great lengths to discover and fix areas causing major water loss in order to save water and lower water costs to their customers.

2021 Awards for Excellence

WASTEWATER OPERATOR OF THE YEAR

Steven "Butch" Whitmore

Steven "Butch" Whitmore has been a Class III Wastewater Operator for the City of Oak Hill Sanitary Board for 31 years. Butch is responsible for the Route 61 Wastewater Plant and 21 lift stations. He was also very instrumental in helping to oversee the construction of a $23 million sewer improvement project, which addresses both the collection and treatment systems.

WEST VIRGINIA RURAL WATER SYSTEM MANAGER OF THE YEAR

Terry Wayne is the System Manager for the Cowen Public Service District. Terry has worked for Cowen Public Service District for 26 years and has held the position of System Manager for 10 years. He holds a Class II Drinking Water and Class II Wastewater Certification. Under Terry's leadership, Cowen Public Service District is always doing something to improve and are currently in the process of an upgrade.

Terry Wayne

2021 Awards for Excellence

PRESIDENT'S AWARD

Alan Haught

WVRWA was honored to bestow Alan Haught with the President's Award. This award is rarely presented. It's a special award for outstanding commitment and dedication in serving rural West Virginia. Alan Haught is the epitome of this award.

Alan has served as the Mayor of Harrisville for 39 years. He has also held various positions within the West Virginia Rural Water Association Board of Directors since 2008. Alan is highly respected in the water and wastewater community in-state and nationally.

ANNUAL TASTE TEST

Morgantown Utility Board

Congratulations to the Morgantown Utility Board, WVRWA's 2021 Annual Taste Test winner. Each year, a select panel of three judges evaluate water samples based on appearance, odor, flavor, mouth feel, aftertaste, and overall impression.

Morgantown Utility Board will be entered to compete in the Great American Water Taste Test that is held in Washington, D.C. at the 2022 NRWA Water Rally.

From left to right: Mike McNulty, General Manager; Mike Anderson, Chief Operator; Greg Shellito, Manager of Treatment & Production; Jacob Fishel, P.E., Assistant Manager of Treatment & Production

WVRWA 2021 Annual Technical Conference











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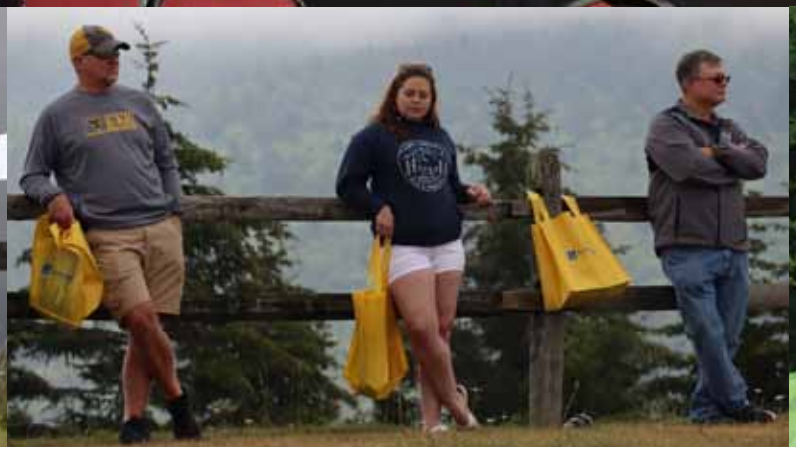

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- DAS Group
- E.L. Robinson Engineering Co.
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- The Thrasher Group
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Track Hoe:
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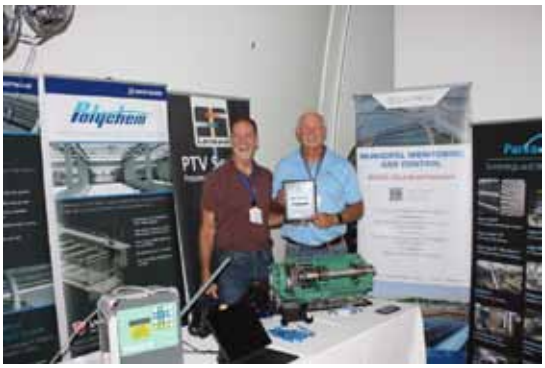

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By Heather Somers, 2% HELP Training Specialist

Deadlines Approaching for Risk and Resilience Assessments

In 1876, two men created innovative products which still effect our lives today. Alexander Graham Bell invented the telephone and West Point graduate Henry Robert presided over a town hall meeting that broke out in melee. This disaster led him to write a code of parliamentary procedures known as Robert's Rules of Order. While most of us keep a phone within reach every hour of the day and may find the invention of the telephone a paramount discovery, don't underestimate the influence Robert's Rules of Order has in daily life, as well.

At its core, Robert's Rules of Order exists to protect and organize democracy. It allows every person present in meeting to have their voice be heard, through an organized, streamlined process. This is achieved by adhering to three major philosophies: every person gets a vote, one topic at a time, and only those in attendance get to vote. This process is carried out though motions. A motion is simply a formal request for action on a topic and generally ends in a vote.

There are four Basic Types of Motions:

1. Main Motions: The purpose of a main motion is to introduce items to the membership for their consideration. They cannot be made when any other motion is on the floor, and yield to privileged, subsidiary, and incidental motions.
2. Subsidiary Motions: Their purpose is to change or affect how a main motion is handled, and is voted on before a main motion.
3. Privileged Motions: Their purpose is to bring up items that are urgent about special or important matters unrelated to pending business.
4. Incidental Motions: Their purpose is to provide a means of questioning procedure concerning other motions and must be considered before the other motion.

After motions are made, if another member of the meeting agrees to continue the topic, then it is generally debated and voted on. Using Robert's Rules of Order allows for constructive debate in which people are not speaking over one another and each person can be heard.

How to debate under Robert's Rules:

1. No member may speak until recognized by the chair.
2. All discussion must be relevant to the topic or question set forth by the motion.
3. No member can speak more than twice to each debatable motion. The second time takes place after everyone wishing to debate the motion has had an opportunity to speak once.
4. Debate must address issues not personalities – no one is permitted to make personal attacks or question the motives of other speakers.

When the debate appears to the chairman to be finished, he should inquire, "Are you ready for the question?" If, after a reasonable pause, no one rises to claim the floor, the chair assumes that no member wishes to speak and, standing, proceeds to put the question. Debate is not closed by the chairman's rising and putting the question, as until both the affirmative and the negative are put, a member can rise and claim the floor, and reopen the debate or make a motion, provided he rises with reasonable promptness after the chair asks, "Are you ready for the question?" If the debate is resumed, the question must be put again, both the affirmative and the negative. Should this privilege be abused by members not responding to the inquiry, "Are you ready for the question?" and intentionally waiting until the affirmative vote has been taken and then rising and reopening the debate, the chair should act as in case of dilatory motions or any other attempt to obstruct business, and protect the assembly from annoyance. When a vote is taken a second time, as when a division is called for, debate cannot be resumed, except by general consent.

"If there is no objection, we will now adjourn the meeting" may be the most popular phrase of the meeting. This is achieved after all items on the agenda are complete, including new business. Only the chair can officially adjourn the meeting; however, members can propose and second a motion to adjourn. After a unanimous vote, there is an obligation for the meeting to be adjourned, but it must be the chair that does so.

For specifics and more detail, check out: https://robertsrules.com/ ■

By Cory Weese, Apprenticeship Coordinator

Introduction of WVRWA's Apprenticeship Coordinator Cory Weese

"If there is magic on this plant, it is contained in water."- Loren Eisley

Hello. My name is Cory Weese and I'm 26 years old. I was raised in a little town called Huttonsville. I now live in a very small town called Dailey, which is located in Randolph County.

I began my water career in August of 2014. I worked for the Town of Beverly. I started out just being the maintenance man. After six months, I started my OIT as a water operator. I got my class 1 in 2015, class 2 in 2016, and became the chief operator in 2017. A few years later, in 2019, I passed my test and received my class 3 drinking water certification. I operated the plant for nearly 6 years. I have also had the opportunity of helping and being chief operator for the past two years at the Town of Harman. They were both such a great learning opportunity. Also, I currently have the pleasure of serving on the board at Huttonsville PSD. I have been a part of that for just a little over a year. I have met some outstanding people and made so many friends along my journey.

I began my new career with West Virginia Rural Water Association in June of 2021. I`m pleased to say I'm now your Workforce Development Coordinator. This new opportunity has opened many new and exciting things for myself. I'm delighted to see where this new journey takes me. ■

Special Interest

NRWA Photo Contest: Rural Water on Display

First place in Tanks & Towers: Welcome to Welch

When I was in high school, I had a decent Canon camera and an interest in photography. I've always enjoyed capturing moments. I'm one of those people who is truly fascinated by history and I love looking back on things. Anyhow, I sold my camera once I started college because it used film and you could hardly get it developed anywhere.

Back in July, I bought a digital camera very similar to my old one. Shortly after, I saw where the National Rural Water Association was bringing back their photo contest. I could submit one photo for each of three categories: Tanks & Towers, Water in Rural America, and Waterworks. The top five from each category would be presented at the NRWA WaterPro Conference and attendees would be able to vote for their favorites. I figured my best chance at placing in the Tanks & Towers category was to find a unique tank or tower. I asked around and was told that the City of Welch had a mural painted on a water tank. I traveled all the way to Welch, which is somewhere I had never been before. I pulled off to the side of the road and took snap after snap of different viewpoints, hoping that just one would turn out well.

I used one of my pictures as the cover for the summer magazine and I submitted another for the photo contest. Ask any of our staff and board members and they'll tell you that I was beyond ecstatic to see the City of Welch's water tank displayed at WaterPro. When the winners were to be announced, Bertis, Danny, Jim, and Mike waited with me. They started with Waterworks and an infrastructure picture I had submitted won second place. They moved on to Water in Rural America and finally got to Tanks & Towers. I was overjoyed when they announced that Welcome to Welch was first.

This was a long story to say thank you to the City of Welch. I was told that quite a few people were seen admiring your water tank. To be completely honest, I don't think it had anything to do with my photography skills or lack thereof. I believe the mural on your water tank was something interesting that many people had never seen before. Although the paint may have faded over time, you have a beautiful and unique water tank. I wanted you to know that people all across the nation saw your tank and clearly thought it was stunning.

Once again, I want to thank the City of Welch for the opportunity to photograph your water tank. I also want to thank the WVRWA staff and board members that supported me and voted for my photos. Words cannot describe my appreciation.

Amanda McGinnis

WVRWA Membership Coordinator ■

Where is this located in West Virginia?

Last issue's answer:

Putnam County Courthouse in Winfield, WV

Recipes to Tempt Your Taste Buds

Pumpkin Spice Cereal Treats

Ingredients:

- **1 1/2 sticks (12 tablespoons) salted butter, plus more for the pan**
- **3 10-ounce bags marshmallows**
- **18 c. crispy rice cereal**
- **1 tsp. pumpkin pie spice**
- **1/4 tsp. yellow food coloring**
- **1/4 tsp. red food coloring**

Directions:

Butter a 9x13 inch baking pan and line with parchment paper, leaving a 2-inch overhang. Melt 1/2 stick of butter in a large pot over medium heat. Add 1 bag of marshmallows and cook, stirring, until melted. Remove from the heat and stir in 6 cups of cereal until combined. Firmly press the mixture into the prepared pan and set aside.

Melt the remaining 1 stick of butter in a clean pot over medium heat. Add the remaining 2 bags of marshmallows and cook, stirring, until melted. Stir in the pumpkin pie spice and food coloring until blended. Remove from the heat and stir in the remaining 12 cups of cereal. Firmly press the orange mixture on top of the plain mixture in the pan. Let cool completely. Use the parchment overhang to lift the treats out of the pan. Cut into squares.

HONORARY MEMBERS

We would like to give a special thanks to all of our current and former Board Members and Staff who have helped shape WVRWA.

April Atkinson
Lew Baker
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Berkeley County PSWD
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East View PSD
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Elk Valley PSD
Elkins
Elkins Road PSD
Ellenboro
Enlarged Hepzibah PSD
Fairview
Farmington
Fenwick Mountain PSD
Flatwoods-Canoe Run PSD
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Fountain PSD
Frankfort PSD
Franklin
Gauley River PSD
Gilbert Water
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Grandview Doolin PSD
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Greater St. Albans PSD
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Hammond PSD
Hamrick PSD
Hancock Co. PSD
Hardy County PSD
Harman
Harpers Ferry
Harrisville
Hillsboro
Hodgesville PSD
Hughes River Water Board
Hundred-Littleton PSD
Huntington Water Quality Board
Huttonsville
Huttonsville PSD
Ice's Run PSD
Jane Lew PSD
Kanawha PSD
Kenova Municipal
Keyser
Kingwood
Lavalette PSD
Leadsville PSD
Lewisburg
Lincoln PSD
Little Creek PSD
Logan
Logan County PSD
Lubeck PSD
Mannington PSD
Marlinton
Marshall County PSD #3
Marshall County Sewage
Mason
Mason County PSD
Masontown
Matewan
Meadow Bridge
Middlebourne
Midland PSD
Milton
Mineral Wells PSD
Monongah
Monumental PSD
Moorefield
Moorefield Regional Wastewater
Morgantown Utility Board
Moundsville Sanitary/Water
Mount Hope
Mountain Top PSD
Mt. View Water Assoc.
Mt. Zion PSD
Nettie - Leivasy PSD
New Creek Water Assoc.
New Cumberland
New Martinsville
Newburg
Northern Jackson County PSD
Norton-Harding-Jimtown PSD
Nutter Fort
Oak Hill Sanitary Board
Oakland PSD
Oakvale Road PSD
Paden City
Parkersburg Utility Board
Parsons
Paw Paw Municipal
Paw Paw Rt. 19 PSD
Pea Ridge PSD
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Pennsboro
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Preston County Sewer PSD
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Red Sulphur PSD
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Richwood
Ridgeley
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Rivesville
Romney
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Salem
Salt Rock Sewer PSD
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Shinnston
Short Line PSD
Southern Jackson PSD
Southwestern Water PSD
Spencer
St. Albans MUC
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Taylor County PSD
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Triadelphia
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Tyler Co. PSD
Union
Union PSD
Union Williams PSD
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White Oak PSD
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1156 South Main Street
Milton, WV 25541
Phone: (304) 743-5573
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Charleston, WV 25301
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Attorneys

***Bowles Rice, LLP**
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Charleston, WV 25301
Phone: (304) 347-1100
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Charleston, WV 25301
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***Jenkins Fenstermaker, PLLC**
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*****Steptoe & Johnson, PLLC**
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****Hayes Insurance Agency**
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Marietta, OH 45750
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Phone: (304) 993-3331
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111 Elkins Street
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Bryan, OH 43506
Phone: (419) 636-2684
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*Aulick Chemical Solutions, Inc.
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Phone: (304) 469-3443
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**CITCO Water
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Huntington, WV 25705
Phone: (800) 999-3484
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*Concrete Pipe & Precast, LLC
194 Deep Meadow Drive
Fishersville, VA 22939
Phone: (540) 487-5445
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*Consolidated Pipe & Supply Co., Inc.
907 Honeybranch Industrial Park
Debord, KY 41214
Phone: (606) 298-0333
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*Core & Main
2825 Fairlawn Ave.
Dunbar, WV 25064
Phone: (304) 768-0086
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3251-C Old Frankstown Road
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672 Main Street, Suite H
Harleysville, PA 19438
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100 Woodlyn Drive
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Phone: (412) 257-1551
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13222 Fairview Road
Newark, OH 43056
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*Gilson Engineering Sales, Inc.
535 Rochester Road
Pittsburgh, PA 15237
Phone: (304) 342-0012

*Golden Equipment Co., Inc.
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*H&S Controls
1747 Country Club Road
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Phone: (304) 265-4433
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*HACH
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South Charleston, WV 25309
Phone: (304) 374-1490

*Hymax/Mueller
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Phone: (267) 236-6184
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*****Master Meter, Inc.**
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Mansfield, TX 76063
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Charleston, WV 25302
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Bellwood, PA 16617
Phone: (814) 742-7700
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****National Road Utility Supply, Inc.**
P.O. Box A
Valley Grove, WV 26060
Phone: (304) 547-0101
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***Neptune Technology Group**
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Wilmington, DE 19806
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***Nexbillpay, LLC**
P.O. Box 19688
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Phone: (800) 639-2435

***Pittsburg Tank & Tower Co.**
P.O. Box 913
Henderson, KY 42419
Phone: (270) 826-9000
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***John P. Place, Inc.**
90 Clairton Boulevard
Pittsburgh, PA 15236
Phone: (304) 343-2607
See Our Ad Page 6

***ProSource Water Products, Ltd.**
14680 Pleasant Valley Road
Chillicothe, OH 45601
Phone: (888) 772-5478
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***Quality Water Services, LLC**
160 John Street
Weston, WV 26452
Phone: (304) 452-9883
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***Service Pump & Supply Co.**
P.O. Box 2097
Huntington, WV 25721
Phone: (304) 429-6731
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***Shafer, Troxell & Howe, Inc.**
97D Monocacy Blvd.
Frederick, MD 21701
Phone: (301) 682-3390

***State Equipment Inc.**
P.O. Box 3939
Charleston, WV 25339
Phone: (304) 776-4405
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***Suez Water Advanced Solution**
1230 Peachtree Street, N.E., Suite 1100
Atlanta, GA 30309
Phone: (855) 526-4413
See Our Ad Page 6

***Tepco-Trombold Equipment Co., Inc.**
P.O. Box 897
Mars, PA 16046
Phone: (724) 625-4260
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***Thompson & Litton**
726 Auburn Avenue
Radford, VA 24141
Phone: (540) 633-1897
See Our Ad Page 35

***Tri State Industrial Coating Contractors Alliance**
512 33rd Street
Parkersburg, WV 26101
Phone: (304) 546-1909
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***United Systems & Software, Inc.**
P.O. Box 547
Benton, KY 42025
Phone: (800) 455-3593
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***U.S. Pipe & Foundry Co., Inc.**
2247 Maiden Lane
Roanoke, VA 24015
Phone: (540) 353-7425

*****USABlueBook**
3781 Burwood Drive
Waukegan, IL 60085
Phone: (800) 548-1234
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***Utility Solutions, Inc.**
327 Curtis St.
Delaware, OH 43015
Phone: (740) 369-4300
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****Utility Technologies, LLC**
1054 Monroe Rd., Suite 105
Lebanon, OH 45036
Phone: (513) 488-1940
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***Valtronics, Inc.**
P.O. Box 490
Ravenswood, WV 26164
Phone: (304) 273-5356
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***Vermeer of West Virginia**
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St. Albans, WV 25177
Phone: (304) 768-5965
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***Warren Pump & Supply**
1551 Jackson Avenue
Huntington, WV 25704
Phone: (304) 429-6723
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***Water Development Authority**
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Charleston, WV 25301
Phone: (304) 414-6500
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***W.C. Weil Company**
P.O. Box 7144
Charleston, WV 25256-0144
Phone: (304) 776-5665
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WVRWA Welcomes New Members

Individual Member

Alan Ayala

Kennon Chambers, P.E.

Mark Dearman

Joshua Hunt

Michael O'Brien

Caitlyn Preast

Associate Member

Concrete Pipe & Precast, LLC

U.S. Pipe & Foundry Co., Inc.

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Big Bear Lake

National Radio Astronomy Observatory

Peterkin Camp & Conference Center

Valley Vista Adventist Center

AFFILIATE MEMBERS

Ashland Scenic Campground

Global Capital of World Peace

The Greenbrier Hotel Corp.

Mettiki Coal (WV) LLC

Newell Company

Twin Falls State Park

INDIVIDUAL MEMBERS

Alan Ayala	John Cobb	Michael Giannini	Joshua Hunt	Michael O'Brien	Shawn Thompson
Timothy Bennett	Steve Cornwell	Kevin Hamrick	John Inghram	Richard Ohalek	Calvin Upton, P.E.
Mike Burkardt	Bruce Darner	Kevin "Ricky"	Ernie Jack	Caitlyn Preast	Doug Urling
Ron Byrnside	Matt Dawson	Hamrick, Jr.	Danny Kirk	Jason Roberts	Frank Welch
Kennon Chambers	Mark Dearman	Michael Hawranick	Patricia Lee	Matthew Stanley	Louis Wooten
Dwayne Duffield	Samme Gee	David Holstein	Michael Morrison	Paul Stover	Gary Young

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