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The official publication of the Alliance of Indiana Rural Water



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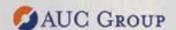




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Todd Gardner Immediate Past President

Raising the Profile of the Water Industry

was asked recently what could be done to help the rural communities and small towns. My answer was educating the public of the value of water. If you want to help the entire water sector, advertise during the Superbowl and promote the value of water. I think back to the 90s. Almost weekly we saw commercials to drink milk. The national advertisement would result in an increase in milk sales, which benefited everyone involved in the dairy industry. If the water industry could get the consumer to see value in water, both produced and reclaimed, as well as treated wastewater, we would be able to have water rates that support maintaining both current and future infrastructure.

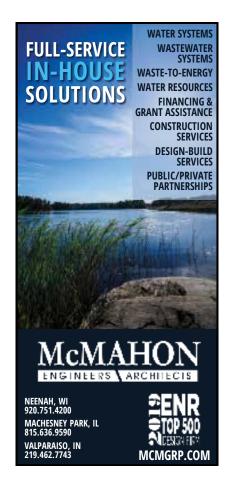
We recently held a Water Day at BBP Water Corp. We had a hog roast that involved a long night and the help of many employees. We partnered with the county soil and water district and had the local DNR. Both organizations set up exhibits in the parking lot that were great for families with kids to visit. All those who visited were given a tour of the water plant by our staff. Our goal was that those who visited and toured our facilities would now know the value of water they receive from our water corporation. If we must educate one customer at a time that is what we will do.

While attending the Fall Conference in Fort Wayne I was fortunate enough to attend some of the classes. Bob Jordan was speaking in one and asked this question: What does the local fire department do when they need a new fire truck? His answer: They hold a breakfast or something to get community members into the fire station to see the station and the trucks. They show the old truck and maybe pictures of the new one. This is all done to rally the community around the need for a new truck. We need to take this approach. The new trucks are great for parades, but the old ones, with a little rust on the bumpers and a few leaking seals, make a great argument for a budget that supports new equipment.

When was the last time anyone besides a vendor saw your wastewater or water plant? When was the last tour you gave to your utility board, or city council? During the last six years I have chatted with many operators from all over the state of Indiana. We all have one thing in common; we have "our story." It's the story of the systems we are all so passionate about. Good or bad stories, the operators and staff talk about their systems as if they are talking about their families, with passion, pride and sometimes a bit frustration. This is the passion that needs to be shared with the community we serve.

My challenge to you is to think outside the norm, work with any source that can help you get the importance of water out to the public. Our Executive Director Connie Stevens did an interview on Imagine a Day Without Water. It really makes

me think differently about the important role we all play in the water industry. Whether you're an associate member that is supporting the water industry with your services, or directly working in any aspect of the water sector, your role is vitally important to the success of your communities, and to the health of your friends, family and neighbors. *







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A Message from the EXECUTIVE DIRECTOR



Connie Stevens Executive Director

Survival of Rural Communities

n the last several years I have heard stories and read several articles about rural communities dying out. Today I can see that tide shifting in the other direction, thanks to good leadership.

Every community needs someone to step up and pull together a group to discuss the needs of that community and to have a vision for that community. This "work group" becomes the critical driver for the community. It is important that we get to know the folks in our areas so that we can get their ideas and input as well. Who knows how much can be brought to the group until everyone has had a chance to speak?

Maybe this working group could start with a list of what you would like to see in your community in the next five to ten years. Next, prioritize that list. Then list what will need to happen to get there. While roads and bridges are important, you and I know how critical the unseen infrastructure is and how unappreciated it is until it is not working or is not there. For our rural communities to thrive, they must have good quality water, sanitary sewers, electricity and broadband. Every community needs qualified people to manage and maintain these necessities.

Many businesses and industries are interested in locating in rural areas as long as they have access to good infrastructure. Rural communities typically provide a good stable workforce, tax benefits and a lower cost of living. Getting involved with your economic development folks or your regional planning council can be helpful. Their purpose is to attract

new industry and businesses while sustaining current businesses.

This could lead to more job opportunities, which could keep or bring young families in our areas, which would then lead to growing and improving our county schools, the need for markets, places to shop, growing our hospitals and other services. So much can happen to improve the quality of life in our communities when we work together. Wouldn't it feel good to be a part of that?

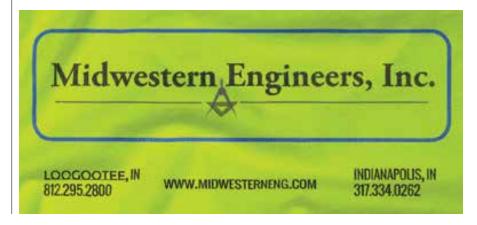
At some point you may want to pursue a planning grant. A planning grant results in a product and a plan of action. You can find a list of certified grant writers by going to www.in.gov/ocra/2536.htm.

Speaking of working together, late in the summer, Kelly Gardner and myself met with Jennifer Rufatto and Ann Mears from the Indiana Electric Cooperatives. They focus on electricity and we focus on water and sewer. We talked about what our missions were for rural communities and were surprised

that we have a common goal: helping rural communities not just survive, but thrive. I'm always excited when I see a small town make improvements. I hope that all rural communities or small towns get the opportunity to make improvements. It doesn't happen overnight. It takes a leader, a work group and a lot of planning.

A colleague of mine, Mike Burrow, says, "Growing rural communities raises the tide for all ships." I agree with that statement. When we help each other in our neighboring communities, we all become stronger together. When new industry, business or housing development comes to rural areas, it draws more interest to surrounding areas.

So if you know of a small rural system that is struggling to keep their utility and community going, please help us reach out and let them know there are options for them. They just need someone in their community to step up and lead. We can share information for them to consider.



2019 Fall Conference Recap Cottober 23 & 24 Fort Wayne, IN



Thanks to you, we had a record-breaking event with over 450 people in attendance! Thank you to everyone who participated in the conference at the exquisite Grand Wayne Convention Center.

On Tuesday evening, we welcomed everyone with dinner and drinks; it was a great time to mingle, get the "lay of the land" and get ready for the conference!

Attendees arrived Wednesday morning to coffee, donuts and a welcome ceremony before going off to their preferred track of classes administrative, water or wastewater. Wednesday's luncheon featured Senator Sue Glick and the finals for the Best Tasting Water in Indiana contest. Mapleturn Utilities was crowned the tastiest in the state and will move on to compete in the Great American Water

Taste Test in Washington, DC next year at the National Rural Water Association's Rural Water Rally. After classroom sessions concluded for the day, the exhibitor reception kicked off with food, drinks, and Water World Jeopardy! Eight contestants lined to the stage to battle for the cash prize and bragging rights as Jeopardy Champion. After it was all said and done, Tyler Weldon from Stueben Lakes Regional Sewer District walked away as the champ! Then, as if that wasn't enough, we ended the evening with a hospitality event in the hotel lobby! It was a great time to wind down from a full day of classes while mingling with peers and friends.

Thursday, everyone woke up to a delicious hot breakfast buffet before starting in on another day of classes. But first, our Annual Membership

Meeting included the election of three board members: Faith Willoughby -District 1, Tom Speer - 2, and Todd Gardner - At-Large, all ran unopposed and were re-elected.

The conference was wrapped up announcing the Sportsman's Raffle prize winners. Over \$4,000 in tickets were sold for the Sportsman's Raffle, the proceeds of which were donated to WaterPac! This year's Grand Prize Winner was Donnie White from West Terre Haute Water Works, who walked away with a Woodworker's Dream Tool Kit worth over \$2,000! Mike Shoda from Columbia City claimed the shotgun for his own!

Thank you to all our attendees, speakers, vendors, and sponsors for helping to make this another fantastic event! *





































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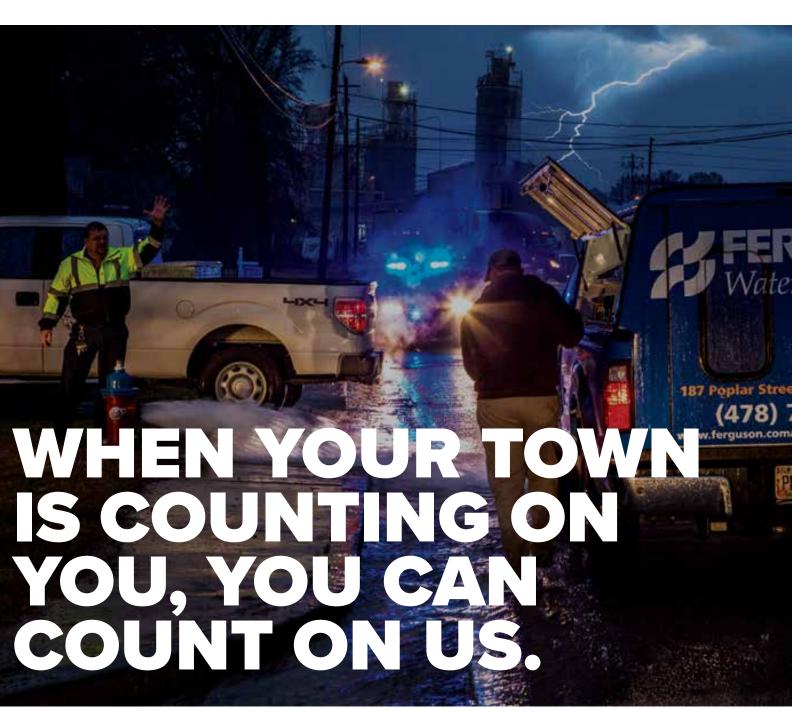
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2019 LEADERSHIP SUMMIT RECAP Monroe County Convention Center – Bloomington, IN

This year's Leadership Summit was on August 1 & 2, 2019 in beautiful Bloomington, Indiana. Utility decision makers - board and council members, managers, and the like -were in attendance for this fantastic event. Networking was the name of the game as attendees learned about new legislation, HR, cybersecurity, safety in the workplace, engaged in round-table discussions, and much more! Also, the Keynote Address was a big hit. Everyone appreciated the humorous emphasis on the importance of leadership delivered by Charles Marshall. A special thank you to all our speakers, attendees and vendors for making the event such a success!

























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Dear Attendee:

Please join us for our **2020 Annual Spring Conference** in French Lick, Indiana on March 18 & 19.



Here's what you can expect this year:



Don't miss the pre-conference hospitality gathering on Tuesday evening across the street at Legendz! National Water Services is sponsoring a night to remember!! All food and drinks are being taken care of along with some great live music!



Earn up to 10 Water and Wastewater CEUs, and receive a FREE Conference T-Shirt!



An Exhibit Hall filled with exhibitors — where you can see all the new products related to our industry and hear about new and exciting services offered to utility professionals.



Each day offers an administrative track of classes in addition to water and wastewater tracks.



An Awards Luncheon on Wednesday will honor the best in the industry. If you know someone who deserves recognition, make sure to complete our Award Nomination Form in this packet!



Plan on having some fun during the reception in the Exhibit Hall on Wednesday evening. As classes conclude for the day, we invite everyone to gather in the exhibit hall for games, drinks, food, and the Sportsman's Raffle!



Later Wednesday evening, join us for a bowling hospitality event! Downstairs at Pluto's Alley we'll have bowling, pizza, and drinks!



A chance to win a free trip for two to the NRWA Water Pro Conference in Phoenix, Arizona. Sponsored by Covalen & Midwestern Engineers



Be sure to be there for Thursday's GRAND PRIZE DRAWING - Worth over \$2,500!



Please SEND us PHOTOS of anyone who will be retiring this year, so we can recognize them!

You **really** don't want to miss out on this year's Spring Conference—so, **don't hesitate** to make your plans to attend.

We look forward to seeing you at the French Lick Resort - 8670 West State Road 56 - French Lick, Indiana 47432



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AGENDA AT A GLANCE

Tuesday, March 17, 2020

Early Registration /

Wednesday, March 18, 2020

7:00 am **Registration Desk Open** 5:30 pm in Lobby

Coffee & Donuts

Break - Foyer

Awards Luncheon

Break in Exhibit Hall

7:45 am Opening Remarks

9:00 am 9:15 am

10:15 am to 10:45 am

to 11:45 am

10:45 am

1:15 pm

1:15 pm 2:15 pm

2:15 pm 2:45 pm

2:45 pm 3:45 pm

3:45 pm

5:15 pm

Board of Directors Meeting

Concurrent Training Sessions

Bowling Event - Pluto's Alley

Fun, Food, Drinks & Sportsman's Raffle!

Reception in Exhibit Hall

Exhibit Hall Grand Opening

Attendee Packet Pick-Up 6:00 pm Pre-Conference Hospitality Event 11:00 pm (fun, food, & drinks AT LEGENDZ)

LIANCE Technical Sessions What follows is a tentative list of topics and invited speakers.

WEDNESDAY, MARCH 18

8:00 a.m. - 9:00 a.m.

Water Session

Everything You Wanted to Know About Air Valves

D. Kim Sorensen ARLUSA

Wastewater Session

Back to Basics - Troubleshooting Pumps and Pump Controls (Part 1)

David Dunnuck - BBC Pump & Equipment Co., Inc.

9:15 a.m. - 10:15 a.m.

Water Session

Arsenic Media / PFAS

Tyler Butel - AdEdge Water Technologies

Wastewater Session

Back to Basics - Troubleshooting Pumps and Pump Controls (Part 2)

David Dunnuck - BBC Pump & Equipment Co., Inc.

10:45 a.m. - 11:45 a.m.

Water Session

10 State Standards & Construction **Permitting Process**

Liz Melvin, Matt Green & Lance Mabry - IDEM

Wastewater Session

Chasing Results in Solids Balance

Don Van Veldhuizen - USABlueBook

1:15 p.m. - 2:15 p.m.

Water Session

Chlorine Blues? Alternative Disinfection

Don Van Veldhuizen - USABlueBook

Wastewater Session

Hydro Excavating

Josh Ritter- Jack Doheny Company

1:30 p.m. - 2:30 p.m.

Confined Space Training (Part 2)

Tom Speer - City of Lawrence Utilities

Sludge Removal The Easy Way

Tom Hinde - Air Diffusion Systems

2:45 p.m. - 3:45 p.m.

Water Session

Protecting Our Source of Drinking Water

Toby Days - Alliance of Indiana Rural Water

Wastewater Session

Lead and Copper in the Waste Stream: Effects on Drinking Water & Wastewater **Utilities**

Jim Collins - Brenntag Mid-South

THURSDAY, MARCH 19

8:30 a.m. - 9:30 a.m.

Water Session

Chemical Applications & Relationship to DBPs

Jim Collins - Brenntag Mid-South

Wastewater Session

True Batch Biological Treatment: A Flexible Solution for Nutrient Removal

Manuel De Los Santos -Aqua-Aerobic Systems, Inc.

10:00 a.m. - 11:00 a.m.

Water Session

What has US EPA Been up to Regarding Drinking Water?

Stacy Jones & Hayden King - IDEM

Wastewater Session

Total Nitrogen Limits - A Biological Perspective

Pat Beamon - Brenntag Mid-South

11:15 a.m. - 12:15 p.m.

Water Session

Confined Space Training (Part 1)

Tom Speer - City of Lawrence Utilities

Wastewater Session

Current Lab Topics and Tips

Becky Ruark - IDEM

Water Session

Wastewater Session

2:45 p.m. - 3:45 p.m.

Water Session

Accounting for Operators

Todd Gardner - BBP Water

Wastewater Session

Maintaining Blower Filtration for Reliability, Efficiency, and Value

Rob Geyer & Joe DiFederico -Endustra Filter Manufacturers

WEDNESDAY HOURS CONTACT OTAL

THURSDAY HOURS CONTACT O

Thursday, March 19, 2020 Registration Desk Open 7:00 am 3:00 pm in Lobby 7:00 am to 8:30 am Hot Breakfast Buffet in Exhibit Hall **Opening Remarks** 8:00 am WIN a Kindle Fire! **Concurrent Training Sessions** 9:30 am 10:00 am **Break in Exhibit Hall** 10:00 am 11:00 am **Concurrent Training Sessions** to 11:00 am 11:15 am **Break in Exhibit Hall** to 11:15 am **Concurrent Training Sessions** 12:15 pm **GRAND PRIZE DRAWING** 12:30 pm in Exhibit Hall 12:30 pm 1:30 pm Lunch - On Your Own 1:30 pm 2:30 pm **Concurrent Training Sessions Break - Shotgun Raffle** 2:45 pm 3:45 pm **Concurrent Training Sessions**





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Technical Registration

March 18 & 19, 2020

Please print or type.

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On-line registration is available with invoicing option! Please email or fax completed forms:

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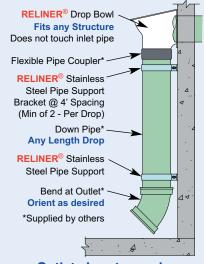
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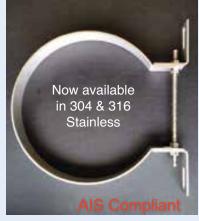
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Wednesday ONLY Technical sessions; Exhibit Hall Access; Awards Luncheon and Reception; Hospitality Bowling Event	\$12	0	\$145	\$22	20	\$245	j‡i
Thursday ONLY Technical Sessions; Exhibit Hall Access; Hot Breakfast Buffet	\$9	5	\$120	\$19	95	\$220	1 7
Spouse / Guest Registration Pre-Conference Hospitality Event (Tues.); Exhibit Hall Access; Awards Luncheon (Wed.); Reception (Wed.); Hospitality Bowling Event (Wed.); Hot Breakfast Buffet (Thurs.)	\$7	5	\$100	\$1	25	\$150	Administrativ
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Admin. / Regional Districts Sessions What follows is a tentative list of topics and invited speakers.

WEDNESDAY, MARCH 18

8:00 a.m. - 9:00 a.m.

Project Development (From Purpose and Need to Substantial Completion)

Dan Wright

FPBH, Inc.

Discuss what steps need to be taken to successfully complete a project from start to finish. Identify the need, select a grant administrator, select an engineer, develop a Preliminary Engineering Report, develop funding options, bidding, construction completion. Learn what are the utilities responsibilities and what is delegated to others.

9:15 a.m. - 10:15 a.m.

Cyber Security -15 Things Every Business Must Do

Andy Uhl

TriCore Logic

Learn about cyber security, cyber security threats, cyber security assessments, and security awareness training.

10:45 a.m. - 11:45 a.m.

The Fast Path to USDA **Guaranteed Financing**

Kent Evans, Matt Peeler, and Monica Pierre Live Oak Bank

Rural communities across the country are facing a tough challenge - aging infrastructure, safe drinking water, reliable wastewater and waste disposal are essential to healthy communities but replacing water tanks or building new wastewater facilities can be burdensome and expensive.

1:15 p.m. - 2:15 p.m.

Let's Give 'Em Something to Talk About: **Public Relations on a Small Budget**

Sarah Helbig

Jones & Henry Engineers

People talk. Your community is no different. So how can you make the talk positive, interesting and keep your efforts inexpensive? Sarah Helbig, the Executive Director of Marketing for Jones & Henry Engineers, will review a few key tips to help generate ideas for where, when and how to find your voice and speak up in your community.

2:45 p.m. - 3:45 p.m.

Mobile Technology: New Advances to Benefit Utilities

Eric Muncy

Precision Products

David Carter

CDP-MapSync

This presentation explores how mobile technology, combined with GIS & GPS, can benefit asset management efforts by improving efficiency and

THURSDAY, MARCH 19

8:30 a.m. - 9:30 a.m.

Bringing in the Next Professional

Don Van Veldhuizen

USABlueBook

Our Industry is in crisis. We need to attract and retain quality people to ensure water quality for the next generation. But how is that done? We will look into what works and does not in this quasi-round table discussion. Topics will include attracting the best candidates, interview techniques, compensation packages, training and how to retain those employees. Done correctly, maybe we can bring in the next professionals that will passionately purse the challenges to come.

10:00 a.m. - 11:00 a.m.

Fidelity Bond Issues

Peter Campbell King Cline, King & King, P.C.

This presentation would emphasize the need for water companies to carry fidelity bonds and provide them with information on how much the insurance should be. This will also cover how to apply for coverage under a fidelity bond.

11:15 a.m. - 12:15 p.m.

Cooperation, Legislation and Regulation: **Emerging Issues in Water and Wastewater**

Hillary Close, Lauren Box and Cheryl Gonzalez Baker Tilly Municipal Advisors, LLC

Discussion of (1) service areas generally, and the impact of regional cooperation; (2) current topics being discussed at the legislature; and (3) emerging environmental issues.

1:30 p.m. - 2:30 p.m.

Effective Reporting of Financial Information for Utility Management

Alex Hilt

Baker Tilly Municipal Advisors, LLC

The workshop will include report examples and audience input regarding the effective communication of financial information to their board council or management team.

2:45 p.m. - 3:45 p.m.

Energy Efficiency

Dee Deia

Alliance of Indiana Rural Water

Bob Deig

Energy Efficiency

Are you concerned about revenues? How about cutting costs? Learn how your utility can become energy efficient and find possible rebates you may be eligible

2020 Hospitality Night

Join us for a FUN Hospitality Night at **Legendz** on Tuesday!



National Water Services is hosting an evening full of

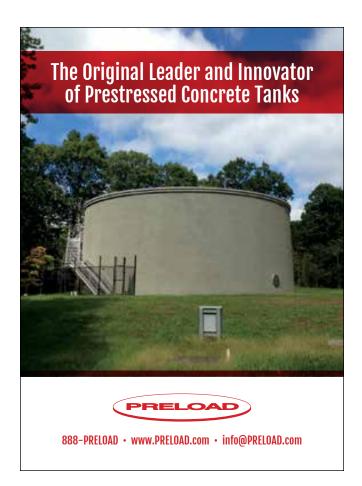
FOOD, DRINKS and LIVE MUSIC!

*Weather permitting, outdoor accommodations will be made including a cornhole tournament!

DATE: Tuesday, March 17th, 2020 TIME: 6:00pm - 11:00pm PLACE: Legendz Sports Bar & Grill



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2019 SCHOLARSHIP **CLAY SHOOT / GOLF OUTING RECAP**

Lawrence, IN







he 2019 Scholarship Golf Outing & Clay Shoot was a fun filled success! We had an exciting clay shoot and played a full day of golf with a sell-out event! Matt Lenz of Aqua Indiana won first prize for the Clay Shoot this for the THIRD year in a row, and the Covalen Team won the golf tournament. Our famous longest drive contest was conducted while sitting on a toilet once again. Teams donated \$20 to the scholarship fund for a chance to hit the longest drive... the only catch was you had to sit on a toilet while hitting the ball! The prize for the longest drive was a new golf bag; but the biggest reason

to participate was that, on their next shot, participants got to drop their ball 165 yards from the hole on a par 5 - not to mention all the fun we had and great pictures it created.

Thank you to all our sponsors and everyone who attended for helping to make the clay shoot & golf outing a success!

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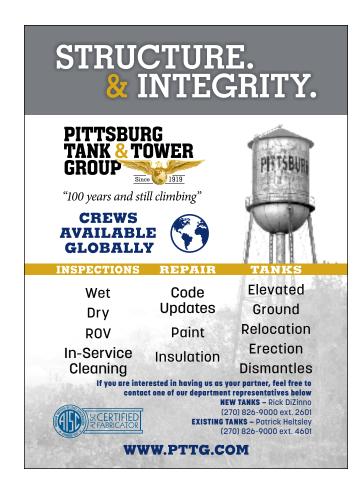


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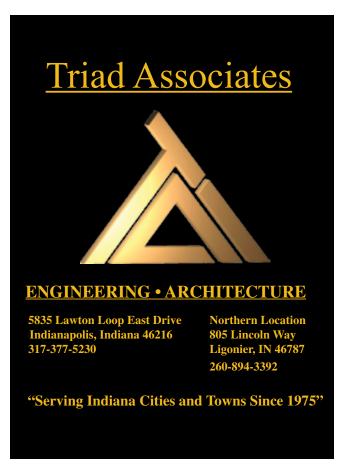


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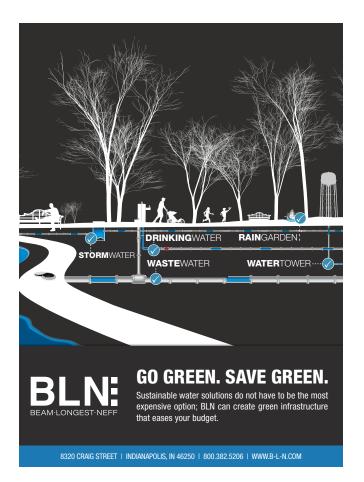


Scholarship Application (Please Print or Type)

A. Personal Information

Name: (Last)		(First)	(M	<u>(I)</u>
Address:				
City:		State:	Zip:	
Phone:	Email	:		
B. Member Inform utility)	nation (Applicant must be a d	ependent child of a sys	tem employee of a wa	ter or wastewater votin
Utility Name:				
Employee Name:				
Applicant's relations	ship to employee:			
C. High School Info	ormation (Transcript must b	e submitted with applic	cation)	
School Name:			Graduation Date:	
Address:		City:	State:	Zip:
GPA:	SAT Score (total):	Class	s Rank:	out of:
	ng the last four (4) years ce – (Describe any work expe	erience during the last	four (4) years)	
C	sity Information (Applicant		first-year college stud	dent)
Address:		City:	State:	Zip:
<u> </u>	4 Year College/University Vocational/Technical Society 2-Year Community/Junio Other, Specify:	chool or College		
Major Course of stu-	dy:(Priority will be given l	out is not limited to wa	ter/wastewater relate	d studies)

Under \$30,000 \$20,000	
011461 \$30,000\$30,000	0 - \$50,000\$50,000 - \$70,000Over \$70,000
If you are receiving other known financial a	aid/scholarships, please itemize by name and amount.
Name:	Amount:
Name:	Amount:
Name:	Amount:
If there are any family circumstances that in	nfluence your need for financial assistance, please describe:
G. Essay On a separate page in 250 words or less. (Pl Write a brief essay on your goals as they rel H. Certification	lease type) late to your education, career, and future plans.
In submitting this application, I certify that knowledge. False information will result in	the information provided is complete and accurate to the best of my revocation of any scholarship granted.
Applicant's Signature:	Date:
Parent's/Guardian's Signature:	Date:
approved by the Alliance of Indiana Rural V of enrollment (transcript or invoice.) Schomust be a first-year college student enrolled Rural Water. Applicant must also be a citi and a dependent child of a system emplapplicant must complete the application f deadline, January 31, 2020. Scholarship quality of leadership in school and communications.	e cost of educational expenses at an accredited institution of higher learning Water. Disbursement of the money will be made upon presentation of proof plarship money will be paid directly to the scholarship winner. Applicants and cannot have received a prior scholarship from the Alliance of Indiana alovee of a water or wastewater voting utility. In order to be eligible, form in its entirety and return it to the Alliance by the entry postmark recipients will be selected based on the number, length of commitment and munity activities, awards, honors, academic records, career goals, work tion must be signed by both applicant and parent/guardian before and on a comparative basis at the sole discretion of the committee. All
submission. Applicants will be evaluate decisions are final. Application materials scholarship constitutes permission to use r scholarship is permitted. Applicant must p	Is and decisions of the committee shall be confidential. Acceptance of recipient's name and/or likeness for purpose of promotion. No transfer of plan to attend an accredited school in the fall of 2020. Recipients will be loyees of the Alliance of Indiana Rural Water and/or members of the Board CHECKLIST Completed application
submission. Applicants will be evaluate decisions are final. Application materials scholarship constitutes permission to use r scholarship is permitted. Applicant must protified by mail. Family members of empl	s and decisions of the committee shall be confidential. Acceptance of recipient's name and/or likeness for purpose of promotion. No transfer of plan to attend an accredited school in the fall of 2020. Recipients will be loyees of the Alliance of Indiana Rural Water and/or members of the Board CHECKLIST Completed application









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BY DAVID ADKINS
WATER CIRCUIT RIDER

A Year of Firsts



his year has been a year of firsts for me: my first year of employment with the Alliance, my first in-service, and my first WaterPro. I also had the opportunity to attend emergency response training in Arkansas and a meeting with Senators Bushon and Senator Tomes to hear their thoughts on the upcoming water audits. What I took away from each of these experiences was new knowledge of our industry that I can pass along to the systems I visit each week.

Throughout the year, the Alliance has spring and fall conferences,

operator expos and monthly one-day training classes. We hope that when you attend the larger conferences you take the time to walk through the exhibit hall and see all the products the vendors have available to make your jobs easier.

The operator expos are a great way to see live demonstrations of products and get a really good meal as well!

Meanwhile, the one-day training classes cover many topics all designed to help keep everyone informed of changing rules and of better ways to operate your water and wastewater plants.

The Alliance hopes that after you attend these events, you walk away with more than just continuing education hours – you walk away with new knowledge that helps you become a better board member, town manager and/or operations specialist. Our mission is to assist you and to be a resource. Hopefully, this year, all of us who work for the Alliance have benefitted our members in some way. I hope you all had a safe and happy holiday season and look forward to serving you in 2020!



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WINTER/SPRING 2020 HOOSIER PIPELINE 33

ATTRACTING THE NEXT GENERATION





t is not a simple task recruiting operators. The shortage of workers is hitting every sector of the workforce and to make hiring new operators even harder, we are competing for the same group of candidates as many similar occupations. This really makes competition for hiring a challenge. A local water system was looking to

hire a new operator and, during the interview process, two very qualified candidates withdrew themselves. One took a full time position with a natural gas company and the other was accepted into the Insulators Union. Unfortunately, this scenario will become more common as the economy grows and the baby-boomer generation retires.

As I travel and talk with utilities, I have seen many operators working into their 70s. Those operators have made lifelong careers, and many enjoy the work and stay well past retirement age. Why operators stay so long in the industry is a question that often comes up. Mark Yager and I asked a few operators throughout Indiana to highlight different parts of the job that appealed to them, and what got them interested in the water industry.

Nate Besse, the Water and Sewer Superintendent for Fowler, said that he was working in a heating and cooling job before he saw an operator opening in his hometown. The stability of the operator job really appealed to Nate because he now has set hours. In his previous job, he never knew when he was getting off work.

The stability of the water industry also appealed to Travis Berret, Waste Water Operator in Boswell. Travis said, "You're always going to have a job. You're always going to have water coming in and going out." Travis also likes the job's autonomy. The town council is his boss and they are not looking over his shoulder all the time. He also enjoys working on a variety of tasks from repairing pumps, cleaning out tanks, lab testing, and many other activities.

Richard VanSickle, Delphi's Wastewater Superintendent, enjoys working outdoors and being away from all the hectic bustle downtown.

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"People need to know that when guys at the wastewater treatment plant take a sample, it's not like they are taking a sample of toilet paper and turds." Gerald, one of Delphi's wastewater operators, moved to Delphi and saw that the wastewater treatment plant was expanding, and after talking to Richard, he was hired.

Many of those we spoke with did not know about water operations until they accepted their current positions. When Nate Besse saw an operator position in his hometown of Fowler he decided to investigate. Meanwhile, Travis Berret was already involved in Boswell before operating wastewater. He also helps with streets and fire duties, trims trees, mows, and does anything else the town needs. This is a common finding as we talk with operators. Many are involved in the communities in which they work.

The need for licensed operators is increasing rapidly. The National Apprenticeship Program is designed for training operators, but it is also a tool for our members to use when filling open positions. The Alliance Apprenticeship program currently has 14 apprentices in training. Many are new hires, like Keaton Robertson, Ethan Gagnon and John Wendleburg, who were hired directly out of high school. This program will help attract and recruit candidates to fill certified water/wastewater operator careers.

The challenge of attracting the next generation of operators will require us all to think outside of our normal routine. The Alliance of Indiana Rural Water has been working on Youth Outreach by attending Career Fairs at high schools, all to raise awareness of the water industry. The Alliance also invites students to conferences to learn more about the industry.

There are very few programs that prepare students for water and wastewater operations. The students visiting the Vendor Exhibit Hall at The Alliance Conference often find it is better than any career fair they could attend. They get to see all the different career opportunities that are involved with serving the water industry. We hope this outreach will interest the

younger generation and spark interest in our industry.

Randy, Mulberry's wastewater superintendent, made use of the local high school's co-op program by bringing in a handful of high school seniors to work at the wastewater treatment plant. The boys studied at school for part of the day and worked with pay at the plant for part of the day. At the end of the year, one of the boys really enjoyed and excelled at the work, so the council hired him on as an operator once he graduated from high school. Randy is very proud of this young operator's ability and work ethic. People with mechanical aptitude, problem solving skills, an interest in science, and good math skills will do well in water operations. These are some qualities to mention when talking to school administrators and teachers about possible workers in a co-op program.

Jobs in water/wastewater operations offer a stable career opportunity with plenty of rewards and challenges. These jobs will continue to be needed because they are local in nature; they cannot be outsourced to another country or closed for business. There are plenty of challenges involved, such as understanding new industry technology and working hands-on with that technology. The field is intellectually demanding because it requires an understanding of public health, the environment and environmental regulation. The job is fulfilling, with a straightforward purpose to deliver safe and sustainable water and wastewater services to the community being served. It allows operators to serve their communities and protect the environment for the health and safety of future generations.

Operators around the state told me that they are attracted to the industry because they have a family and want to stay close to the community they live in. In hiring new employees, we need to think outside the box because so many industries are fighting for the same talent.



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WATER PROJECT

By Dennis Berkey, Sixth Grade Teacher, Westview Elementary

School are becoming experts in water. This rural school with a large Amish population is located in LaGrange County. Sixth graders are building "pond" ecosystems and monitoring the water quality. Teachers and students love this hands-on approach to science and the lessons that are learned.

Groups of students started building their ponds approximately three weeks earlier. Aquariums housed water, gravel, hay and dirt as well as several types of microscopic algae and animals. Students also wrapped the aquariums with tinfoil, allowing "sunlight" to have contact with the surface.

Students then tested the water environments several times a week. Temperature, ph, alkalinity, nitrates, ammonia, O_2 , phosphates, hardness, turbidity, chlorine and metal levels were checked and recorded for each pond. They also created slides, using microscopes to check the health of the living things in their ponds.

Donald Papai and Kevin Wenzel, from the Alliance of Indiana Rural

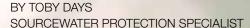
Water, came in and discussed the process of making dirty water clean and usable. They discussed how fertilizers and runoff affects our water source as well as how wastewater is treated in municipalities. "You students are the future," stated Mr. Papai. "Understanding the importance of clean water will impact generations to come."

Our goal is that our students understand the importance of keeping our water clean and usable. We also want them to understand the impact we have on our environment.











Envirothon

o you think your school has what it takes to become the next Envirothon champions?
The mission of the Envirothon (envirothon.org) is to develop knowledgeable skilled and dedicated citizens who have an understanding of natural resources and are willing and prepared to work towards achieving and maintaining a balance between the quality of life and the quality of the environment.

The Envirothon mission is accomplished by developing in young people an understanding of the principles and practices of natural resource management and ecology and through practice dealing with complex resource management decisions.

Sound like individuals we need to recruit into the water industry?

The aging workforce in the water industry has many Indiana communities concerned as to where they are going to find their next qualified water and wastewater operators. The spirit of competition stimulates students' interests in environmental concerns and motivates them to further develop their skills and grow into environmentally-aware, action-oriented adults. Engaging early with your local students, in competition-based environmental learning, like the Envirothon, can be a fun way to cultivate interest in our next generation of water and wastewater operator specialist.

During the Envirothon, thousands of teachers and professionals throughout the United States and Canada guide high school students through an



environmental education program that combines classroom learning with outdoor activities. This exposure to nature from a critical perspective – and its interrelationship with human impacts on the natural world – provides invaluable lessons and develops an understanding of ecosystems and our environment. It all starts locally in communities just like yours.

On a brisk October day, 341 seventh grade students congregated at Goshorn Park in Clay City, IN to participate in the 2019 Clay County Soil & Water District's Nature Bowl. Six member teams rotated through seven different stations to gain hands-on knowledge in a diverse array of environmental topics. Each station tests students' knowledge and understanding of natural resource issues and local conservation concerns, while cultivating students' desire to learn more about natural resources and environmental issues. Not only is the Nature Bowl a fun learning opportunity for students, but it also serves as a preview to the Envirothon, a national

environmental competition in which students can participate when they are in high school. The Clay County Soil & Water Conservation District sponsors two teams from North Clay High School and two teams from Northview High School to participate in the Envirothon every year.

The Brazil Water Department was honored to represent one of the seven stations at the 2019 Nature Bowl. Katrina Raubuch, Brazil Water Superintendent, put on a fun and engaging program, teaching about the importance of water resource management and how to protect our drinking water sources. Students were amazed as Katrina explained the fascinating journey water takes to get from the source to our taps and back to the source.

Join the competition. Contact your local Soil and Water Conservation District and schools to participate in Envirothon. It is a fun learning experience that provides for a sustainable future for us all.





America's Water Infrastructure Act

merica's Water Infrastructure Act (AWIA) was enacted October 23, 2018. This law requires drinking water systems to develop risk and resilience assessments and emergency response plans (ERP). Only community public water supplies serving more than 3,300 population are required by the Environmental Protection Agency (EPA) to complete these risk assessments and ERPs. It is required by Indiana Department of Environmental Management (IDEM) that all community water systems and non-community water systems, that are required or plan to maintain operations during an emergency, develop and maintain an ERP. It is recommended, however, that

all public water supplies develop and maintain an ERP based on risks to that water supply. For purposes of this article, we will focus on the AWIA requirements.

The purpose of the risk assessment is to establish the risk and resilience of your drinking water system. This will include risks from natural hazards and malevolent acts, consideration of the system's physical components (including security and cybersecurity), monitoring practices, financial infrastructure, chemical use/storage/handling and overall operation and maintenance. There are tools and resources to assist you with completing the risk and resilience assessment. EPA has developed a tool, the Vulnerability Self-Assessment Tool (VSAT) for your

use. It is not required to use this tool but it does meet the requirements of the AWIA. Any other template that meets the requirements can be used.

Once the risk and resilience assessment is completed, the system must certify to EPA that it is completed. Do not send your assessment to EPA, only the certification is to be sent. There are various methods of submitting the certification. Once you have certified completion, you will have six months to submit your ERP certification to EPA.

The emergency response plan must include ways to improve the resilience of your system, including physical security and cybersecurity. Procedures for implementing plans to overcome a natural hazard or malevolent act will be documented. Ways to significantly reduce the impact of such disruptions, which may include equipment to be used, will be listed. This should include alternate sources of water. Any strategies to assist in detecting any disruptions should be listed. If possible, coordinating with your local emergency planning committee should be an integral part of your ERP development.

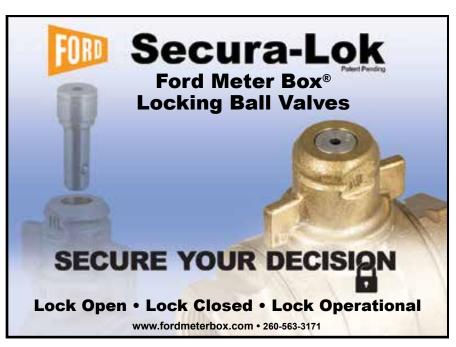
Your assessment and ERP must be kept and maintained for five years after your EPA certification. It is recommended that you keep at least one copy onsite and one offsite. IDEM's rules require you to update your ERP annually. So it is recommended that you review and/or update the assessment at that time. The timelines for completing your assessment and ERP are based on the population that your serve.

If you have any questions, please check out our website www.inh2o.org on the resource/link page. There is a direct link to EPA's website for more detailed information. You can also call us at 317-789-4200. As usual, we will assist in any way to get your assessment and/or ERP completed. Also look for training classes on assessments and emergency response planning on our 2020 calendar. ★

Certification Deadlines

Population Served	Risk Assessment	Emergency Response Plan*	
≥100,000	March 31, 2020	September 30, 2020	
50,000-99,999	December 31, 2020	June 30, 2021	
3,301-49,999	June 30, 2021	December 30, 2021	

*Emergency response plan certifications are due six months from the date of the risk assessment certification. The dates shown above are certification dates based on a utility submitting a risk assessment on the final due date.





astewater and water treatment plants use a significant amount of energy to run processes and operations daily. Where do you use the most electrical energy? Aeration and pumping for wastewater treatment and pumping for water treatment.

The US Environmental Protection Agency (EPA) has estimated that 4% of the power generated in the US is for water and wastewater treatment. The usage equates to 56 billion kilowatt hours (kWh), \$4 billion and 45 million tons of greenhouse gas (GHG) production.

What can you do to reduce your energy costs? Where do you start? The first place to start in both water and wastewater treatment plants, is to understand your electric utility rates

and rate structures. Evaluating off-peak demand to reduce costs, plus load monitoring and shifting opportunities could provide monies for additional energy management. Looking into utility rebates as well as federal and state grants for energy efficient operations or use of alternative energy sources such as wind and solar may also gain funds you may need for other operations.

Know the amount of total energy your facility uses. This is called your baseline and your starting point.

An energy assessment can help you understand where and how much energy your plant is using. The next step is to put in place energy efficiency measures that have been determined to work for your facility.

Passive energy measures are simple to put in place without expense or complicated equipment. Active energy measures require automation and optimization of processes. The final step is monitoring and verifying your energy usage. The monitoring will allow a plant to report and record energy use and establish energy goals and indicators for effectiveness of measures put in service.

Energy assessments are provided at no cost to you through the Alliance of Indiana Rural Water. Contact me to see how I can help you achieve energy efficiencies for your utility. I can be contacted at ddeig@inh2o.org or 317-508-1505. Feel free to contact me to see how I can help you.



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THE IMPORTANCE OF SOPS



ecently, my services were requested by a small facility. This facility has only one operator who runs the water, wastewater, streets, parks, and even the cemetery. This operator has no backup!

One Tuesday morning, he came to work and soon after had to leave and go to the hospital with pain. He had to have emergency surgery and was told he would be out for weeks! The facility had contacted me because even though they have a lagoon that was not discharging at the time, their permit still says they have to grab a raw sample once a week

and have it analyzed for BOD, TSS, NH3, and PH.

I met a retired board member from the town and proceeded to help him grab a raw sample out of the main lift-station to the plant. I then had to show him how to fill out the Chain of Custody form and show him how to preserve the NH3 sample since he was taking the samples to a local lab to be analyzed. Also, I had to explain that the PH sample had to be analyzed immediately because, by the time the other samples made it to the lab, it would be invalid.

The reason he was taking the sample to a lab was because there was not enough time for me to show him how to perform all the lab tests. This is where standard operating procedures (SOPs) should have been created.

SOPs should have been created for all lab procedures, including how to fill out a chain of custody sheet. They should be written in a very simple form so that even someone with no knowledge of the content should be able to understand what is being explained.

A couple of weeks later this same system had me come back because they needed to discharge from their lagoon. Once again, I met the board member to see if we could figure out how to proceed. We had to get the operator on the phone and he guided us through figuring out, using a formula, how much we could discharge into the stream. He told us how to set up the proper dosage for the chlorine and sodium thiosulfate, including what valves to open and close and what effluent samples to grab. Once again, if there had been SOPs, the operator would not have to bother helping us while recovering from surgery.

SOPs should be created for all tasks to be performed at a plant: lab, daily operations, operational procedures, liftstation checks, ect. A sample of these forms can be found on the internet by googling, "SOP Procedures.' Or, simply, contact another plant to see what SOPs they are using. *

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HOW TO WRITE AN SOP

(Standard Operating Procedure)

BY MARK GREGORY

ith the weather beginning to change and the vacation season winding down, I thought it would be a good time to talk about SOPs (Standard Operating Procedures). They can be very helpful to systems when all personnel may not be readily available for process control needs.

Not all operators working at the system are required to be certified. These non-certified operators **cannot** make process control decisions. A process control decision is any action to maintain or change the quality or quantity of water being treated. Only by direct order of an available operator or through the use of Standard Operating Procedures (SOP) is an uncertified or not appropriately certified operator able to initiate those process control decisions as are specified in the direct order or SOP. An available operator is the certified operator designated by the system owner to make process control decisions for his system.

Certified Operator In Responsible Charge Writes/Reviews/APPROVES Standard Operating Procedures for the System

A Standard Operating Procedure

(SOP) is a document consisting of stepby-step information on how to execute a task. An existing SOP may need to just be modified and updated, or you may be in a scenario where you have to write one from scratch. It sounds daunting, but it's really just a very, very, very thorough checklist.

Choose your format.

There is no right or wrong way to write an SOP. However, your company probably has a number of SOPs to which you can refer for formatting guidelines, outlining how they prefer it done. If that's the case, use the pre-existing SOPs as a template. If not, you have a few options:

- A simple steps format. This is for routine procedures that are short, have few possible outcomes, and are fairly to the point. Apart from the necessary documentation and safety guidelines, it's really just a bullet list of simple sentences telling the reader what to do.
- A hierarchical steps format. This is usually for long procedures – ones with more than 10 steps, involving a few decisions to make, clarification and terminology. This is usually a list of main steps, all with substeps in a very particular order.
- A flowchart format. If the procedure is more like a map with an almost infinite number of possible outcomes, a flowchart may be your

best bet. This is the format you should opt for when results aren't always predictable.

Consider your audience.

There are three main factors to take into account before writing your SOP:

- Your audience's prior knowledge. Are they familiar with your organization and its procedures? Do they know the terminology? Your language needs to match the knowledge and investment of the reader.
- Your audience's language abilities.
 Is there any chance people who
 don't speak your language will be
 'reading' your SOP? If this is an
 issue, it's a good idea to include lots
 of annotated pictures and diagrams.
- The size of your audience. If multiple people at once are reading your SOP (those in different roles), you should format the document more like a conversation in a play: user



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one completes an action, followed by user two, and so on and so forth. That way, each reader can see how he or she is an integral cog in the well-oiled machine.

Consider your knowledge.

What it boils down to is this: Are you the best person to be writing this? Do you know what the process entails? How it could go wrong? How to make it safe? If not, you may be better off handing it over to someone else. A poorly-written – or, what's more, inaccurate - SOP will not only reduce productivity and lead to organizational failures, but it can also be unsafe and have adverse impacts on anything from your team to the environment. In short, it's not a risk you should take. If this is a project you've been assigned that you feel compelled (or obligated) to complete, don't shy away from asking those who complete the procedure on a daily basis for help. Conducting interviews is a normal part of any SOP - creating process.

Decide between a short or long-form SOP.

If you're writing or updating an SOP for a group of individuals who are familiar with protocol, terminology, etc., and just would benefit from a short and snappy SOP that's more like a checklist, you could just write it in short-form. Apart from basic purpose and relevant information (date, author, ID#, etc.), it's really just a short list of steps. When no details or clarification are needed, this is the way to go.

Cover the necessary material.

In general, technical SOPs will consist of four elements apart from the procedure itself:

Title page. This includes 1) the title of the procedure, 2) an SOP identification number, 3) date of issue or revision, 4) the name of the agency/division/branch the SOP applies to, and 5) the signatures of those who prepared and approved of the SOP. This can be formatted however you like, as long as the information is clear.

- **Table of Contents.** This is only necessary if your SOP is quite long, allowing for ease of reference. A simple standard outline is what you'd find here.
- **Quality Assurance/Quality** Control. A procedure is not a good procedure if it cannot be checked. Have the necessary materials and details provided so the reader can make sure they've obtained the desired results. This may or may not include other documents, like performance evaluation samples.
- Reference. Be sure to list all cited or significant references. If you reference other SOPs, be sure to attach the necessary information in the appendix.
- Your organization may have different protocol than this. If there are already preexisting SOPs you can refer to, abandon this structure and adhere to what's already in place.

Make your writing concise and easy to read.

Odds are your audience isn't choosing to read this for fun. You want to keep it short and clear - otherwise their attention will stray or they'll find the document formidable and hard to grasp. In general, keep your sentences as short as possible.

- Here's a bad example: "Make sure that you clean out all of the dust from the air shafts before you begin using them".
- Here's a good example: "Remove all dust from air shafts before use". In general, don't use "you." It should be implied. Speak in the active voice and start your sentences with

If necessary, interview the personnel involved in the process on how they execute the task.

command verbs.

The last thing you want to do is write an SOP that is just plain inaccurate. You're compromising the safety of your team, their efficacy, their time, and you're taking an established process and not paying it any mind – something your teammates may find a little offensive. If you need to, ask questions! You want to get



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this right. Of course, if you don't know, ask multiple sources, covering all roles and responsibilities. One team member may not follow standard operating procedure or another may only be involved in a portion of the deed.

Break up large chunks of text with diagrams and flowcharts.

If you have a step or two that are particularly intimidating, make it easy on your readers with some sort of chart or diagram. It makes it easier to read and gives the mind a brief hiatus from trying to make sense of it all. And it'll be appear more complete and well-written for you. Don't include these just to bulk up your SOP; only do this if necessary, or if trying to bridge a language gap.

Make sure each page has control document notation.

Your SOP is probably one of many SOPS. Because of this, hopefully your organization has some type of larger database cataloguing everything within a certain reference system. Your SOP is part of this reference system, and therefore needs some type of code in order to be found. That's where the notation comes in. Each page should have a short title or ID #, a revision number, date, and "page # of #" in the upper right hand corner (for most formats). You may or may not need a footnote (or have these in the footnote), depending on your organization's preferences.

Test the procedure.

If you don't want to test your procedure, you probably haven't written it well enough. Have someone with a *limited knowledge* of the process (or a person representative of the normal reader) use your SOP to guide them. What issues did they run across? If any, address them and make the necessary improvements. It's best to have a handful of people test your SOP. Different individuals will have different issues, allowing for a wide variety of (hopefully useful) responses. Be sure to test the procedure on someone who's never done it before.

Anyone with prior knowledge will be relying on *their* knowledge to get them through and not your work, thus defeating the purpose.

Have the SOP reviewed by those who actually do the procedure.

At the end of the day, it doesn't *really* matter what your bosses think of the SOP. It's those who *actually* do the work that it matters to. So before you submit your work to the higher ups, show your stuff to those who will be doing (or who do) the job. What do *they* think? Allowing them to get involved and feel like they're part of the process will make them more likely to accept this SOP you're working on. And they'll inevitably have some great ideas!

Have the SOP reviewed by your advisors and the Quality Assurance team.

Once the team gives you the go ahead, send it to your advisors. They'll probably have less input on the actual content itself, but they'll let you know if it meets formatting requirements, if there's anything you missed, and the protocol for making it all official and inputted into the system. Route the SOP for approvals using document management systems to ensure audit trails of the approvals. This will vary from

organization to organization. Basically, you want everything to meet guidelines and regulations.

Signatures will be necessary and most organizations nowadays have no problem accepting electronic signatures.

Once approved, start implementing your SOP.

This may involve executing a formal training for the affect personnel (e.g., classroom training, computer-based training, etc.) or it may mean your paper is hung up in the bathroom. Whatever it is, get your work out there! You worked for it. Time for recognition! Be sure your SOP remains current. If it ever gets outdated, update it, get the updates re-approved and documented, and redistribute the SOP as necessary. Your team's safety, productivity, and success matter on it.

I do have a template and some example SOPs if anyone would like to look them over. The one thing I always stress when writing an SOP is to write down every single step. Many of us have done procedures for so long that we do some of the steps as second nature without even thinking. You need to ensure that these important pieces are not left out of the SOP.

Remember, we all live downstream. *





The Difference Between *Real* and *Apparent* Water Los

ith the first validated water audits due this year, I wanted to provide you with the differences between real and apparent water loss as found in the Manual of Water Supply Practices; M36; Water Audits and Loss and Control Programs Fourth Edition; American Water Works Association (AWWA), which I used to prepare this article.

Whether they are over one hundred years old or brand new, all water systems have water loss, both real and apparent. Real losses are the physical losses from the pressurized system and the utility's storage tanks, up to the point of customer consumption, which is the customer's meter in those utilities that meter their customers. In unmetered systems - yes there are a few of them – the delineation is the point at which the customer is responsible for customer service connection piping maintenance and repairs. Real losses include leakage from mains and service connections, the largest component by volume for most systems and storage tank overflows.

Leakage is the water escaping from the distribution system caused by defects, ruptures, or failures in piping and pipe joints. Reported leaks are visible, disruptive leakage, while unreported leakage run sight unseen and background leakage is a small volume not detectable by sonic methods.

Apparent losses in customer consumption can be attributed to inaccuracies associated with customer metering, systematic data handling errors, and unauthorized consumption, whether by theft or illegal use of water. These nonphysical paper losses result in uncaptured revenue for the water utility and distortion of customer consumption data.

Customer meter inaccuracies are caused by the collective under-registration or malfunction of customer water meters. Meter inaccuracy can occur as a result of meter wear, improper sizing or type of meter for the customer usage, or improper meter installation, aggressive water quality, malfunction and other causes. Well-functioning meters will wear as volumes of water pass through them over time, eventually under-registering the flow.

Systematic data handling errors pertain to customer consumption and billing data error that occurs in the water utility's business processes as a result of lax oversight, poor procedures, or gaps in information programming and archiving. These are apparent losses caused by structural or random errors existing in the meter reading, data transfer, accounting, or archival function of the customer consumption management. These include inaccurate estimates, extended periods where no meter readings are obtained, poor account adjustment protocols and poor accountability allowing some consumers to exist without accounts in the billing system. These shortcomings distort the actual volume of registered as customer consumption and cost utilities revenue to which they are entitled.

Authorized consumption is the volume of water taken by registered

customers, the water supplier and others who are implicitly or explicitly authorized to do so by the water supplier for residential, commercial, industrial or agricultural purposes. Authorized consumption does include water consumed in such activities as firefighting and training, flushing of mains and sewers, street cleaning, watering of municipal gardens, public fountains, frost protection, building water and so forth.

Authorized consumption may be billed or unbilled and metered or unmetered. Unauthorized consumption is any water taken from the distribution system without the authorization of the water utility. This may include unpermitted water withdrawn from fire hydrants, illegal connections, bypasses to customer meters, meter or meter reading equipment tampering, or similar actions. It is one of the primary components of apparent water loss.

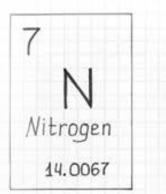
Non-Revenue Water refers to components of system input volume that are not billed and produce no revenue. It equals unbilled authorized consumption plus apparent and real losses.

This article was written with the intent of helping you understand some of the information needed to prepare the Water Loss Audit Report and validation which will be due by August 1, 2020. Remember that the audit needs to be validated by a certified validator, a third party who did not participate in the preparation of the audit.

If you have any questions feel free to contact me at *gmeyer@inh2o.org*. ★







Total Nitrogen Limits, On the Horizon?

itrogen is essential for all organisms. But, when excessive amounts enter our waterways, huge algal blooms can occur. Some kinds of algae are toxic and produce bacteria that cause illness to humans. Combined with excess phosphorous, these blooms can be massive, affecting possible millions of people by limiting their availability to clean drinking water. Many National Pollutant Discharge Elimination System (NPDES) permits have limited phosphorous discharges as well as ammonia amounts for years. Ammonia is toxic to aquatic life, but it is not the only form of nitrogen to cause environmental problems. Thus, the Environmental Protection Agency (EPA) and the Indiana Department of Environmental Management (IDEM) have started adding Total Nitrogen monitoring to NPDES permits.

Indiana Wastewater Treatment Plants with an average design flow of 1 MGD or greater, that applied for renewal or modification to their NPDES permit after January 1, 2019, will have Total Nitrogen monitoring requirements in the NPDES permit renewal. The monitoring process will not need to start until it is placed in the permit. Total Nitrogen Monitoring is in response to a memorandum from EPA in September 2016. The memorandum, "Renewed Call to Action to Reduce Nutrient Pollution and Support Incremental Actions to Protect Water Quality and Public Health," described problems in our waterways caused by large amounts of nitrogen and phosphorous. Because, Nutrient Pollution remains one the greatest challenges to our water quality and presents a growing threat to public health and local economies, EPA's memorandum highlights the need for continued action to address the challenge.

Total Nitrogen is a combination of Total Kjeldahl Nitrogen (ammonia, organic and reduced nitrogen), nitrate and nitrite. High nitrate levels in drinking water can cause Blue Baby Syndrome. Also known as methemoglobinemia, Blue Baby Syndrome is a condition that turns the baby's skin blue. This is due to a lowered amount of hemoglobin in the baby's blood. Symptoms of this condition can include difficulty breathing, vomiting, diarrhea, lethargy, seizures and even death. Sources of nitrates may include agricultural runoff or seepage, industrial and municipal wastewater discharges, landfills, CAFOs, septic tanks and urban drainage. These nitrogen forms also contribute to the increasing trend of harmful algal blooms in surface waters that can release toxins that pose human health risks. In one example, 400,000 residents in Toledo, Ohio lost their public drinking water for three days in 2014, due to algal toxins.

IDEM's "Total Nitrogen Monitoring Major Sanitary Discharges Frequently Asked Questions and Answers" publication states, WWTPs that have a Total Nitrogen Monitoring requirement will need to use a 24 hour composite sample from the final plant effluent at least once a month to perform the total nitrogen testing procedure. Test results in concentration and loadings in lbs/day need to be included on the monthly NetDMR report.

Monitoring total nitrogen will help EPA and IDEM understand how much nitrogen is being discharged to waterways, and be able to set future limits much better and more accurate than testing for only ammonia. Per EPA, the following equipment options are commonly used to collect total nitrogen data from the field; meters, multiparameter probes and contract laboratories. Total Nitrogen

Kits are also available to be run on spectrophotometers. The exact method will be on your renewed NPDES permit.

Total nitrogen has become a huge concern due to its impact on eutrophication of water sources. This excessive richness of nutrients in water bodies, causes dense growths of plant life and death of animal life from lack of oxygen. EPA and IDEMs goal is to reduce the outbreak of these growths, which will help preserve the water quality of Indiana's waterways for years to come.

As always, The Alliance of Indiana Rural Water is available to assist in anyway with questions you may have as the monitoring process for Total Nitrogen probably morphs into compliance limits for the NPDES permit holders currently monitoring. Our current group of field staff all have some degree of wastewater experience, and will at least understand your concerns and can contact the appropriate staff member to assist you.



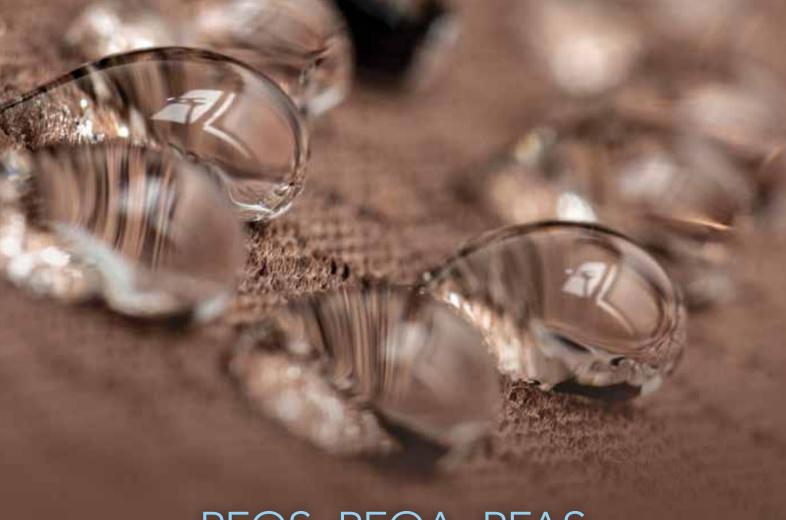


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PFOS, PFOA, PFAS Simplified Fact Sheet

(what we know as of now...)

BY SARAH FRYMARK, MRWA SOURCE WATER SPECIALIST

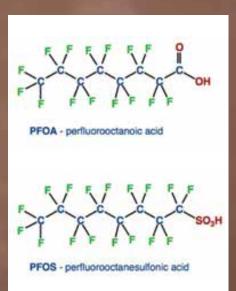
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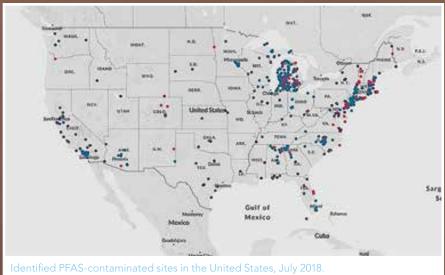
The per-and polyfluorinated substances (PFAS), perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), are a group of chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. PFASs are chemically and thermally stable. They bioaccumulate (become concentrated inside the body) and biomagnify (the concentration increases at each trophic level though the food web). As a result, they are found in water, soil, air, humans, and plants.

What uses PFOA, PFAS, and PFOS?

- Scotch guard
- Any Teflon products
- Firefighting foams
- Upholstery, Carpeting, floor wax
- Oil resistant packaging some pizza boxes, to go containers, cookware, fast food wrappers
- Sealants
- Gore-Tex; water resistant clothing
- Industrial Factories for the carpet, paper and electronics

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Why do we care?

These compounds are strictly *man-made*. With that, PFOA is a carcinogen, a liver toxicant, a developmental toxicant, an immune system toxicant, and exerts hormonal effects including alteration of thyroid hormone levels. Animal studies show developmental toxicity from reduced birth size, physical developmental delays, endocrine disruption, and neonatal mortality.

Though, the long-term effects of exposure, and consumption in humans is truly unknown. This is a compound that was created and introduced in *our* lifetime. Research has just begun on the impacts.

EPA established a health advisory with PFOA, PFOS to a combined 70 parts per trillion... (that's a teeny tiny number too).

Where are we finding it?

Almost everywhere, to be frank. Its been found in water – drinking and non-drinking water sources – soil, human toxicology, animal toxicology, sludge and biosolids, household dust, outdoor air, indoor air, and, finally, plants.

What is being done about this?

Only a handful of states have established guidelines for safe drinking water levels and only for two PFAS chemicals. US EPA has however published a health advisory level set at 70 parts per trillion (ppt).

Federal, State, Non-Profits, Universities, and many Associations "It's going to take a village to address this issue. But there is no reason why we can't find a solution to this by staying positive and knowing that, together, we can make this right."

are dedicating time, energy, and money into research. Regulations are to be expected in the upcoming years.

What can we do in the water industry?

Expect regulations to be coming soon. Currently, research has shown a couple solutions to removing these compounds from water.

- GAC- granular activated carbon.
 They stick to one another and allows water to pass through.
- PAC- powdered activated carbon
- Ion Exchange Resins like magnets, sticks and removes chemicals

Though don't get too excited. The best way to dispose of the used carbon with PFAS in it has yet to be figured out. Incineration at a very high heat index seems to currently be the only disposal option. Because of the build of this compound, it is literally designed to be resistant, and to be hard to break down. This gives disposal an impossible task of breaking down a compound that doesn't want to break down.

Contaminated sludge and biosolids also must be properly disposed. Land application of these biosolids has shown flora and fauna pick up the compounds and the contamination spreads.

Time of travel for soil contamination is not known. Assuming they travel at the rate of other heavy metals in soil, we can expect groundwater, and aquifers to start showing PFAS soon. EPA is suggesting that, if an aquifer or water source is contaminated with PFAS, then it is necessary to move to another water source – though we all know how unrealistic that may be. Furthermore, we haven't yet even touched the topic of cost.

So what now?

How depressing is this fact sheet? The best we can do, as of now, is to stay educated. Stay on top of this topic and continue to support colleagues in research. Research is much needed. That is indeed an understatement. Obviously, try your best to avoid products that 'knowingly' use these chemicals. Along with all the other negative news articles about the environment, we must stay positive. It's going to take a village to address this issue. But there is no reason why we can't find a solution to this by staying positive and knowing that, together, we can make this right.

Sources: epa.com; cdc.com; and aswda.org. ★

NRWA Apprenticeship Program Graduates

FIRST WATER SYSTEM **OPERATIONS SPECIALIST**

he National Rural Water Association (NRWA) recognized its first graduate with a Certificate of Completion from US Department of Labor, Office of Apprenticeship at its annual conference on September 9, 2019 in Nashville, Tennessee with more than 2.000 in attendance.

Nick Hines from Indiana became the first Water System Operations Specialist to graduate from the NRWA Apprenticeship Program through the Alliance of Indiana Rural Water (AIRW) registered apprenticeship program.

In July 2017, NRWA certified its National Guideline Standards of Apprenticeship for Water and Wastewater Operation Specialists through the US Department of Labor (USDOL). Requirements include 4,000 hours of on-the-job training, 144 hours of related training instruction per year, documented onsite work hours, and periodic worksite checks that are conducted by the State Association.

This two-year training program was developed in response to the industry's need to train the next generation of skilled workers and standardize training across the nation.

"Rural Water has been training the workforce for over 40 years," NRWA Deputy CEO Matt Holmes said. "This apprenticeship program is at the core values of Rural Water to look ahead and plan for tomorrow by providing real-world, practical solutions that ensure safe, affordable drinking water and efficient wastewater management to our communities."

The NRWA Apprenticeship Program currently has more than 20 participating states and nine active programs. "These programs are forging workforce development pathways and fostering relationships in high schools, colleges, technical schools and government agencies," Holmes continued.





Connie Stevens, AIRW Executive Director, took the stage first to welcome Nick Hines for recognition and was accompanied by Shannan Walton, NRWA Apprenticeship Program Manager; Todd Gardner, BBP Water Corporation CEO; and Kelly Gardner, AIRW Assistant Executive Director.

"Our main goal is to do the best job we can to instill the knowledge and confidence in these apprentices to provide the best quality water for our communities in the future," Stevens stated.

Hines was employed for a year with BBP Water Corporation when he entered his training as a water operator.

He commented that he was in his last semester at Indiana University when he began his part-time job with BBP Water Corporation. Upon graduation with a Bachelor's in Environmental Science, he was offered a full-time position and, from then on, Hines never turned back.

"The Water Apprenticeship program broadened my horizon exponentially. It gave me a well-rounded education," Hines remarked during his certificate acceptance. "The program has made this job a career for me."

The Water Apprenticeship program broadened my horizon exponentially. It gave me a well-rounded education. The program has made this job a career for me.

66

Water is the best. You can live without power, you can live without gas, you can even live without Wi-Fi. Water is the one thing you cannot live without.

That makes me so passionate about what I do even more.

99

Gardner explained that this registered apprenticeship program provides classroom training to bridge the gap that his company did not provide with it hands-on training.

"I believe that rural water systems throughout America have the best professionals," Garner said. "They're passionate and care about the communities they serve. They know every aspect of the job."

Walton presented Hines with the framed certificate on behalf of NRWA, acknowledging that "it took the village, the system, program sponsor, the staff, the apprentice, the mentor" for this day to happen. Hines was granted 2,500 hours of credit for previous work experience, which left approximately 1,816 hours of on-the-job training (OJT) in order to complete the 4,000 OJT our time-based apprenticeship program. In addition to the on-the-job learning, Hines had to complete 191.5 hours of industry-specific related technical instruction after he was awarded 97 hours for courses acquired through his bachelor's degree.

When Hines found out that he was on track to be the first graduate of the NRWA Apprenticeship Program, he wasn't going to let anything stop him, not even a tornado.

Hines told his heartfelt story about becoming the first to finish this program. "My hometown was recently hit by a tornado," he said. "I personally had no damage. We were without power for four days. I turned on my generator and then my Wi-Fi hotspot on my phone. A tornado couldn't stop me from finishing this."

Earlier this year, a neighboring system needed temporary assistance until they could find a permanent operator. Gardner asked Hines if he would help since he was already a licensed operator. When Hines agreed, Gardner said, "Great! You are now the operator over this plant."

Hines was beside himself that Gardner had that much confidence in him. "It was stressful, but I feel like I can run any plant." Hines stated.

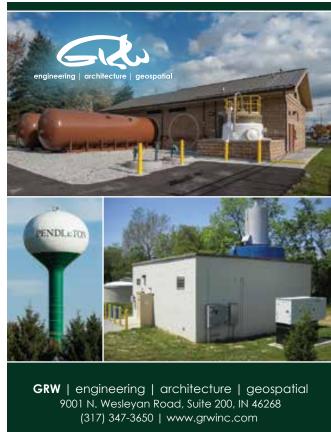
Alliance of Indiana Rural Water Association currently has 12 apprentices in its registered apprenticeship program and has been a leader in setting the standard nationally for other states to follow.

"Water is the best. You can live without power, you can live without gas, you can even live without Wi-Fi. Water is the one thing you cannot live without. That makes me so passionate about what I do even more," Hines finished his remarks with a resounding standing ovation.













We get LETTERS



I heard that Joe Frazier is retiring and thought I would let you know how much he has been such a big help to the town and me. I have called him during work hours and after work with issues that I have had at the water plant. He would give me ideas to deal with issues that I have had or he would call other people and let me know. He has done leak surveys for the town and even today he came over when I called him to pinpoint a water main leak on a cold rainy day. I appreciate all that he has done for the town and me.

David West, Water Superintendent, Shipshewana

June 13, 2019

I just wanted to tell you that Kelly Gardner and Rex Blanton did a wonderful job with our new Apprentice's orientation. Not only did they make our new employee feel welcome and a part of the Alliance family, but they did a great job of explaining the process and making sure that everyone (sponsor and apprentice) understood what is expected of them going through this program. I feel that at the end of his apprenticeship we will have a well-rounded employee who has the knowledge for our District to continue in the future as it has in the past. We are excited for the opportunity to be a part of such a wonderful program!

Kudos to you and all of your staff for a job well done!

Nancy Harmon, Office Manager, South Henry Regional Waste District

September 3, 2019

Good Afternoon! Hope you had a good long weekend. I wanted to send the Alliance of Indiana Rural Water some positive feedback on behalf of my environmental education campers. The kids were working on an environmental science activity and when they were doing a webquest on earth's resources they ended up on your webpage (at www.www.inh2o.org/Resources/Links.aspx) They thought I should let someone know that we were using the links there and found some AWESOME water info, especially from the NRWA site. So, thank you.

They also decided it would be nice of us to return the favor, so they did some research to find another educational water resource to share with you.

Kids' suggestion: (Water Cycle Glossary of Terms) -- www.oberk.com/watercycleglossaryofterms

It's a great water cycle vocabulary page (we used it to make flash cards!) so they thought it'd be a helpful link for you to add to your resource-links page they found... would you be able to? They'd be so proud and I'd love to show them their suggestion. Thanks so much again and have a good day!

Miss Ainsworth (with KM, JS, VM, and AM)

September 10, 2019

I'm writing to thank you and the Alliance of Indiana Rural Water again for the timely help with a recent leak we had on one of our city streets. We encountered a wet spot that was approximately a 60ft X 15ft area. Water was seeping in several places and we weren't sure where to excavate.

Dave Adkins received my phone call asking for help and drove more than two hours to help us narrow down our proposed excavation site to a 3ftX5ft area. In order to do this, he used leak detection equipment that our small utility otherwise doesn't have access to. He then drove more than two hours back on a Friday afternoon. His mark for the leak was spot on. The leak was right in the middle of our excavation, which makes therepair that much easier. The service the Alliance provided to us saved us an estimated \$1500-\$2000 in street repair costs alone. Thank you for making Dave's experience and expertise available to us.

Jeremy Farrar, Utilities Manager, Town of Poseyville

September 11, 2019

A big thank you to everyone at your organization! Toby Days came down to our location and completed a phase 1 wellhead protection plan for us and was an all around very nice person to work with and get to know. He answered all our questions and took quite an interest in making sure everything was completed and done properly. There is no way I could have done this without him.

Its a good feeling to know that an organization like yours can help little public water systems like us comply with all the things that have to be done.

Many, many Thanks

Todd Kulich, Kulich Rentals Inc. PWS# 5236010

We get LETTERS



During Aug/Sept 2018, our church developed a problem with our water system well casing, which required repair, system chlorination, and IDEM monthly water testing for a year. We recently passed the final 12th monthly test on September 16, 2019. When I contacted the IDEM Drinking Water Dept representative to request return to quarterly water testing, I was informed that we needed to have a Level 2 Assessment performed and submitted to IDEM.

IDEM would review the assessment, and if appropriately passed, we would receive a letter authorizing our church to return to quarterly testing. However, the IDEM Field Rep for Allen County area had been reassigned and IDEM did not have anyone to perform this Level 2 Assessment. They sent me a list of certified Level 2 Assessors. On the list for Allen County, was Mr Donald Papai, who works for your Alliance of Indiana Rural Water organization.

Mr Papai quickly responded and scheduled a Level 2 assessment with us, which we completed on September 27, 2019 at 10:00 am. Mr Papai also quickly finished and submitted the final Level 2 assessment on the same day. I really appreciated Don's prompt response and professional manner in which he conducted the survey with us. It was a pleasure working with him and he provided excellent information and guidance throughout our assessment. I would highly recommend him to anyone needing water system assistance in the future.

I would also like to thank your organization for allowing Don to perform this Level 2 Assessment for our church at NO COST. This is greatly appreciated.

Thank you very much,

Paul White

On behalf of Sonrise Roanoke and Main Church

October 8, 2019

Dave Adkins just left from looking for water leaks for the town. This is the second time you have sent him to help our little town out. He found a good sized leak the first time. This time we are sure he has found two leaks. I will let him know when I get them dug up and fixed. He even explained a couple questions I had regarding my lagoons. He has been very helpful. I thank him and the Alliance for helping us out.

Rodney Hawk, Public Works Director, Town of West Lebanon

October 16, 2019

Recently Sherri Winters spent a lot of time helping the Town of Cayuga water department doing our Emergency Response and Risk Assessment, and Dave Adkins spent a lot of time helping the town of Cayuga Wastewater Department doing our Emergency Response and Risk Assessment. If not for the help I don't know how I could have gotten them done. We are glad to have an organization and staff that preforms these services for communities. Again, we would like to say thank you for all the help we received from the Alliance. It is a valuable organization for all the Water/Wastewater departments.

George E. Hinote Jr., Operator of Water / Wastewater, Town of Cayuga Indiana.

October 17, 2019

Thanks for having Dave run down to help confirm the reason for our issues at our main lift station.

Mike Schnuck, Lincoln State Park

October 29, 2019

Just wanted to pass on a huge thank you and shout out to Rex Blanton. This morning, with the help of the exam review course and Rex's positive encouragement I was able to pass the Municipal Wastewater Operator Class I examination.

This was a major undertaking for me, as I'm not an operator and the duties/responsibilities are not part of my area of expertise. The time spent in the exam review course along with a lot of self-study and preparation for the weekly classes pulled me through. I will highly recommend the exam review course to anyone looking to take the IDEM examinations.

Thank you,

Vanessa Fisher, Water/Wastewater Operations Assistant, Lebanon Utilities

Thank you so much for sponsoring the Alliance Scholarship! I am extremely grateful and honored to be a recipient of this generous scholarship. This award will benefit me greatly when I attend Purdue University this fall.

Kaylyn Couch

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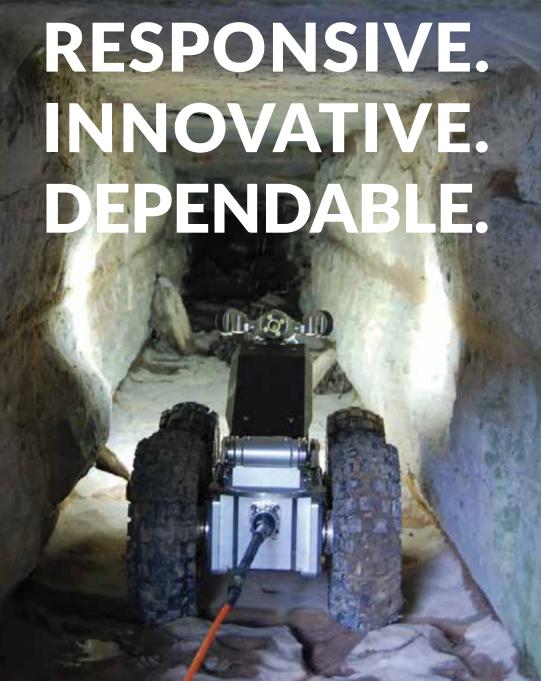
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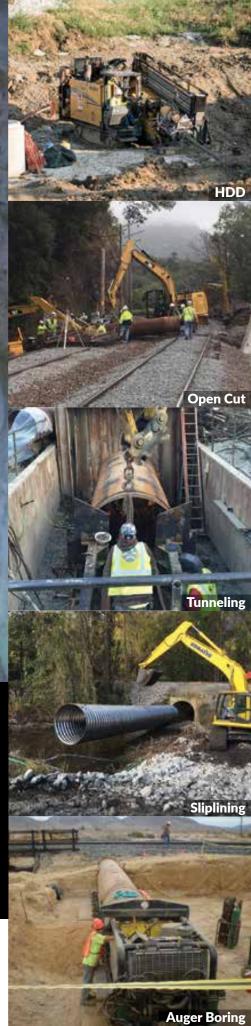
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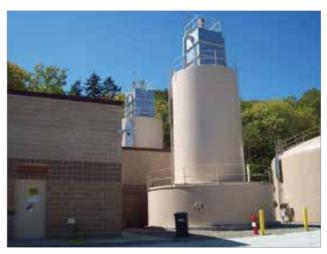
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