



# FYI - Small Systems

Small Systems Committee  
INDIANA SECTION AWWA

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August, 2006

**AWWA SMALL SYSTEMS  
COMMITTEE**

**Chair**

Odetta Cadwell  
Indiana Rural Water Association  
317-402-7349 – Cell  
[OdielRWA@aol.com](mailto:OdielRWA@aol.com)

**Committee Members**

Neal McKee  
Southern Madison Utilities, LLC  
317-773-7128 – Office  
[nmckee@iquest.net](mailto:nmckee@iquest.net)

Gale Gerber  
Nappanee Water Utility  
574-773-4623 – Office  
[ggerber\\_4655@yahoo.com](mailto:ggerber_4655@yahoo.com)

Brian Reed  
Town of Mentone  
574-353-7554 – Office  
[mwd@medt.com](mailto:mwd@medt.com)

Liz Melvin  
IDEM Drinking Water Branch  
317-308-3366 - Office  
[lmelvin@idem.in.gov](mailto:lmelvin@idem.in.gov)

Jeff Hoshaw  
Peerless-Midwest, Inc.  
574-254-9050 – Office  
[jhoshaw@pamidwest.com](mailto:jhoshaw@pamidwest.com)

Jeff Morris  
M.E. Simpson Company  
800-255-1521 - Office  
[jeffm@mesimpson.com](mailto:jeffm@mesimpson.com)

John Shettle  
Orestes Town Board  
765-754-8893 - Office  
[John.shettle@mail.house.gov](mailto:John.shettle@mail.house.gov)

Chad Ducey  
Werks Management, LLC  
317-595-2178 - Office  
[chadducey@werksmanagement.com](mailto:chadducey@werksmanagement.com)

Dallas Winchester, II  
Town of Milford  
574-658-4614 - Office  
[milfordutilities@kconline.com](mailto:milfordutilities@kconline.com)

John Crider  
Town of Berne  
260-589-2811 - Office  
[cobwater@adamswells.com](mailto:cobwater@adamswells.com)

Rob Coghill  
Town of Chandler  
812-925-6213 - Office  
[rdcoghill@adelphia.net](mailto:rdcoghill@adelphia.net)

Bruce Hauk  
Town of Westfield  
317-896-5452 - Office  
[bhauk@westfieldtown.org](mailto:bhauk@westfieldtown.org)

## FYI

We hope you will be able to join the Indiana Section AWWA and Indiana Rural Water Association for our joint Operator Boot Camp to be held at the Grissom Aeroplex in Peru. If you have not received any information on this as yet, please visit either of our websites ([www.inawwa.org](http://www.inawwa.org) or [www.indianaruralwater.org](http://www.indianaruralwater.org)) for more details.

Emergency preparedness is still in the forefront. Hopefully some of the articles in this issue will help you to think thru the needs of your system and how you and your utility would react to various situations. System failures, the wrath of Mother Nature, and employee illness are facts of everyday life. Being prepared beforehand can make a big difference!!

This newsletter contains an article regarding Board responsibilities written by a Town Council member. We encourage you to share FYI-Small Systems with your Council or system owners so they are aware of issues you face in the operation of your utility. Communication and sharing information is key.

We look forward to seeing you at the Operator Boot Camp, or any of the upcoming AWWA District Meetings!!

## WHAT'S UP WHAT'S NEW - IDEM

There is a lot of information out there and I know it's difficult to keep up with everything. I'm including a few more pieces of information for you. Some are resource documents you can download. Don't despair; we are always here to help you through the regulatory maze. Anytime you have a question, please call. I can be reached at 317/308-3366. If I can't answer your question, I'll do my best to find the answer or find out who best to answer it. I know sometimes we are difficult to reach, especially field staff, but we'll do our best to get back with you. We each have voice mail, but very few of us in the field section are in on a daily basis. Please ring out to the secretary if you have an urgent matter or have been unsuccessful in reaching us. She can locate us for you. We encourage questions. It helps you; it helps us.

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EPA has developed the *Water Security Handbook: Planning for and Responding to Drinking Water Contamination Threats and Incidents*. This simplified Handbook contains information targeted primarily at drinking water utility personnel, small systems, and managers. Health officials, laboratories, fire, police, emergency medical services, and local, state, and Federal officials will also benefit from the information in the Handbook.

The Handbook describes how to recognize intentional water contamination threats and incidents, what actions a utility should take in the event of a threat or incident, possible roles of the water utility within the larger Incident Command framework, and how the National Incident Management System is organized. It describes the utility's actions and decision making during site characterization, laboratory analysis, public health response, remediation, and recovery. The Handbook should also be helpful to utilities that are preparing or updating their emergency response plans. To view the Handbook online, log on to EPA's web site at <http://www.epa.gov/watersecurity/> and click the link under "What's New." For more information, please contact John Whitley by email at [whitley.john@epa.gov](mailto:whitley.john@epa.gov) or by phone at 202-564-1929.

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EPA's Water Utilities Team has just announced the publication of the latest in their STEP (Simple Tools for Effective Performance) Guide series. This Guide, *Total Coliform Rule: A*

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## FYI FROM THE SECTION CHAIR

Lately, working with others who have volunteered to serve on our new Emergency Response Committee, I have been hearing, reading and thinking a lot about emergencies and how we might prepare for them. The two emergencies in particular that we have chosen to concentrate on first are a major Midwest earthquake and a bird flu pandemic. Both are expected to have wide spread impacts and require different kinds of responses. We don't know when they are going to occur or how bad they are going to be, but sooner or later odds are they are going to occur and responding to them is going to be a challenge.

Think about it, when a bird flu pandemic occurs there will be a need to minimize human contacts. Everyone is going to initially be running to Wal-Mart and Meijer scrambling for food and supplies and then hunkering down in their homes trying to stay away from everyone else. As more and more people get sick, business operations at every level will be impacted and our medical facilities will be overwhelmed. Many of us will be either home sick or home taking care of sick loved ones. During that period the most vital need will be a continued supply of safe drinking water. Those of us who manage and operate our water systems now, insuring that we have safe drinking water 24-7 throughout our communities, will be needed like never before. Unfortunately, many of you may be sick or at home taking care of others. For small systems, that are managed and operated by one or two people, the continued operation of the water system will depend on whether or not you prepare.

Here are a few suggested preparations that you might consider taking just to get started:

- Take out your emergency management plan, update the emergency contact numbers, place it in a prominent location in your office and label it so that if your not there others who may be called on to fill in for you will be able to find and use it.
  - Get permission from your board, town manager or mayor to identify and cross-train two or three individuals so that they can operate the system safely during an emergency. (Look for suitable retirees in your community to fill this need if you don't have access to other personnel within your organization.) Then get them cross-trained.
  - Write down your critical operating procedures and maybe even put labels on some of the equipment and controls. (Have the people who you are cross-training help you write the procedures and identify what needs to be labeled.)
  - Make a list of your current chemical suppliers with phone numbers and a list of the specific chemicals you purchase on a regular basis.
  - Assemble a set of spare keys and put them in a location where the folks you crossed trained can gain access to them.
- Learn everything you can about preparing for and responding to an outbreak of the bird flu and make what additional preparations you feel are appropriate for your situation. (Go to [www.pandemicflu.gov](http://www.pandemicflu.gov) to get started.)

When the outbreak occurs and depending on how bad it is you may never be thanked or recognized for making preparations. However, the preparations you make today that insures the continued delivery of safe drinking water throughout your community during such an event without a doubt will save lives. What more incentive do we need to act?

Stan Diamond, Chair  
Indiana Section, AWWA

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## WHAT'S UP WHAT'S NEW - IDEM (Continued)

*(Continued from page 1)*

*Handbook for Small Noncommunity Water Systems Serving Less Than 3300 Persons*, offers a straightforward narrative that describes the Rule, clearly states why compliance is important for all water systems, and walks through a step-by-step process on sampling – including sample siting plans and sample collection - and discusses what to do if an initial or repeat sample is positive.

This is a “must have” tool for those of you who work with small noncommunity systems. The document (52 pages) can be downloaded at:

[http://www.epa.gov/safewater/disinfection/tcr/pdfs/stepguide\\_tcr\\_smallsys-3300.pdf](http://www.epa.gov/safewater/disinfection/tcr/pdfs/stepguide_tcr_smallsys-3300.pdf)

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Each community water system and nontransient noncommunity water system that produces or delivers disinfected water to their customers will be required to comply with the new Stage 2 Disinfectants and Disinfection Byproducts Rule. By attending one of these training sessions, you will gain useful information regarding your system's specific requirements under this

rule. You will also have the opportunity to earn continuing education contact hours. Stacy Jones, IDEM Regulatory Development Specialist, along with Laura Spriggs and Peter Poon will be conducting training on this rule. The dates have been included in this publication under “Mark Your Calendar”. If you would like to register or have questions please contact Stacy at 317/308-3292, Laura at 317/308-3160, or Peter at 317/308-3328, or toll-free at 800/451-6027.

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I want to reiterate something from the last issue. If you are doing construction or a developer or InDOT is doing construction that affects your lines, or any number of other scenarios, please make sure that you have obtained all of the necessary permits for the construction. We continue to pursue enforcement for systems constructing or allowing construction without a permit. Our permitting section does an excellent job of getting permits out the door in a timely manner. In addition there is the notice of intent (NOI) to construct option under our general permitting rule. Construction application information can be found on our web site or obtained by calling our office. An

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## SO, YOU WANT TO BE A TOWN/CITY COUNCIL MEMBER

By: John Shettle; Town of Orestes, Council President

When you run for Town Council, you generally have somewhat of an idea about what council members do. This is normally acquired by watching what the current and past councils have done.

Sometimes you run because you have an idea for an improvement you want to see implemented. Sometimes you run because you don't like the way things are currently being run. Whatever your motivation, your real knowledge of what the entire job consists of is generally pretty limited.

For instance, if your community operates a sewer and/or water utility, you probably are aware of the amount of your monthly bill, but little more about the management of a public utility. As a council member, you have responsibility for managing the utility. You may not have sought election because of this, but upon election, it's your responsibility and it will be a large part of what you do.

So, where do you start? I suggest you start with meetings and discussions with two important people; your clerk/treasurer and your utility operator/superintendent.

From the clerk/treasurer, you can learn about the revenues the utility can expect to receive and whether they are adequate to properly run and maintain the utility. You can learn something about the normal expenses such as salaries, debt service electricity, chemicals, etc... You will hopefully learn that the current rate structure is bringing in enough revenue to take care of expenses and then some. If your rates aren't adequate, you will need to decide on a rate increase. This is a complicated process with which you will need professional help.

From your Utilities Operator or Superintendent, or whatever the title is, you can expect to learn about the system and its' components. Some will be working well, others may be in poor condition, and some may even need replacement. You should be able to learn a little about the cost of replacing pumps, motors, chlorination systems, meters and a number of other things. If your operator is on the ball, you should learn of future plans for improvement of the system. If you do not hear it, you should ask about it.

An important part of utilities management is the quality of the knowledge of your personnel. Your Operator must be certified by IDEM and this certification must be kept current by regular attendance at training sessions conducted by various utilities based associations (IRWA, AWWA, etc...). These sessions can be one day or even several days long and cost anywhere from \$200.00 to \$500.00 including lodging and meals. To make sure your employee attends, you will probably need to pay the fees and allow time off the job to attend. If training and Continuing Education Hours are not mentioned by your Operator, you should be asking. Since you are going to the trouble and expense of funding the training, you should listen to what was learned at the sessions and the things your utility should be thinking about.

To be an effective Town Council Member, you need to understand as much as possible about your utilities. Some Council members get so involved that they can act as assistant Operator in emergencies. If you do this, just remember that your IDEM certified operator is your boss in this instance; he/she is the one with the certification.

Managing an effective utility means that the Council, the clerk/Treasurer, and the Utility Operator are operating as a team and teamwork requires trust and cooperation.

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## WHAT'S UP WHAT'S NEW - IDEM (Continued)

*(Continued from page 2)*

ounce of prevention is worth a pound of cure.

Next Water Works Operator Certification Exam is scheduled for November 2, 2006. Applications must be postmarked by September 18, 2006. The exam site location is the Indiana Government Center South Conference Center, Indianapolis. Other sites may be added if the need warrants. The application can be downloaded from our website at <http://www.in.gov/idem/compliance/water/index.html>. If you have any questions, please contact Ruby Keslar at 317/308-3305 or Denny Henderson at 317/308-3304. If you can't make this date, the Spring exam is scheduled for May 10, 2007.

## HYDRANT FLOW TESTING

*John H. Van Arsdel, Marketing Manager; M.E. Simpson Co., Inc*

In the course of distribution maintenance, hydrant flushing has become a useful tool in determining flow conditions in the water mains. However, there are distinct differences in the types of flushing programs used by water utilities to accomplish their goals. The two types of flushing are Hydrant Flow Testing (or Fire Flow Testing) and Unidirectional Water Main Flushing. Hydrant flow testing and fire flow testing are the same. This is where fire hydrants are opened and flushed, pressure and flow data collected, and calculations made to determine what is called potential fire flow at that particular point in the water main. Unidirectional flushing is where hydrants are opened and the flow in the water main is controlled in one direction so that debris is flushed out of the water mains.

Many Utilities will flush hydrants without controlling the flow direction in the water main. While this will allow hydrants to be checked for function, it does not allow the water main to be flushed clean of debris, and it does not allow pressure and flow data to be collected so that the potential fire flow (amount of water the water main is capable of delivering when it is needed for fighting a fire).

This article will be directed towards hydrant flow testing, also known as fire flow testing.

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## TRACK YOUR CONTACT HOURS!!

Keeping track of the contact hours you have acquired toward your certification renewal does not have to be a cumbersome task. A simple spreadsheet can do the trick:

**Water CEUs Tracking Chart for John Smith**

Date	Name / Course Taken	Certification	Expires	<u>Technical</u> Contact Hours Awarded	<u>General</u> Contact Hours Awarded	Total Contact Hours Acquired
	<b>Total Contact Hours</b>	DSS 123456	06/03/06			
	<b>Needed by 06/30/08 -- 10</b>	WT1 789000	06/30/08			
05/24/06	AWWA/IRWA Indiana Water Operator Training Workshop			6	0	6
12/04/06	IRWA Water Institute			10	2	18
02/27/07	AWWA Annual Conference			8	4	30
	Total Technical vs. General Hours (% Technical)			24	6	80%

The above spreadsheet can be easily modified to track multiple certifications and multiple operators.

Every time you attend an IDEM approved workshop, seminar, or conference, just record the hours you received. When your operator certification renewal notice arrives, you can easily see if you've met your required amount of contact hours.

If there is a discrepancy between your records and IDEM's records, call IDEM (317-308-3284) to determine where the inconsistency lies.

Current certification hour requirements are as follows:

**Water CEU Requirements**  
*(3 year certification period)*

Certification Classification	Contact Hours Required
DSS	10
DSM	15
DSL	15
WT1	10
WT2	15
WT3	25
WT4	30
WT5	30
WT6	30

**Wastewater CEU Requirements**  
*(2 year certification period)*

Certification Classification	Contact Hours Required
I-SP and A-SO	5
I, II, A, and B	10
III, IV, C, and D	20

Please note that 70% of the contact hours obtained for your certification renewal are required to be technical as determined by IDEM.

## INDIANA SECTION AWWA METER MADNESS COMPETITION "PARTICIPATE DURING THE UPCOMING DISTRICT MEETINGS"

By: Jeff Morris; Competition Chair

It is once again time to compete in the Indiana Section's Meter Madness Competition. These preliminary rounds will be held at each of the upcoming District Meetings. Each utility is encouraged to enter one person in the competition at the district level. The winner of each district will then compete at the Annual Conference to be held in February of 2007.

The meter to be used in the 2006 / 2007 Meter Madness Competition is the Hersey model 430 5/8 x 3/4 displacement meter. To obtain a meter on which to practice, please contact Bob Hauser of National Waterworks at (812) 621-1261 or contact Jeff Morris of M.E. Simpson Co., Inc. at (800) 255-1521.

Steve Russell of Logansport Municipal Utilities and Tim Sensibaugh, the returning champ from the City of Ft. Wayne Utilities, represented the Indiana Section at AWWA's National Conference in San Antonio, Texas in June of this year. Although we did not bring home the national trophy, Steve and Tim made the Indiana Section proud by giving all the other sections competing a run for their money. Congratulations Steve and Tim!

One note to remember - the 2006 / 2007 National Meter Madness Competition will be held at the ACE Conference in Toronto, Canada and the Indiana Section AWWA donates a large portion of the travel and accommodation expenses to the lucky winner of the state competition to be held in February. So get your practice meters and your passports ready.

Thanks to all the contestants and to their supervisors for allowing them to participate in the Meter Madness and attend the District, State and National meetings.

A big thank you goes to Bob Johnston, Dennis Luck and Bob Hauser of National Waterworks for supplying the 2005 / 2006 AMCO meters and the outstanding trophies, and thanks also to Charlie Chapman of Ford Meter Box for their generous donation of the meter test bench.

Thanks again to everyone involved with this great competition.

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## HYDRANT FLOW TESTING (Continued)

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### PERFORMING FIRE-FLOW TESTS

The primary function of fire-flow tests is to determine water pressure and flow-producing capabilities for fighting fires at any location within the distribution system. Additionally, fire-flow tests can help determine the general condition of the distribution system by detecting reduced flows from heavy deposits on pipe walls. Fire-flow tests can also help detect closed valves in the system.

Insurance underwriters (the ISO folks...) use the results of fire-flow tests extensively as a factor in setting rates for insurance premiums. They are used by designers of fire sprinkler systems, and by the fire department to determine the rate of flow available at various locations. The results of testing can determine if a building will need a fire pump to be able to get water to a fire inside a structure or whether the distribution system pressure can do the job.

It is good practice to conduct fire-flow tests on all parts of the system about every five to ten years (or whenever needed). If conditions change in the distribution system that may affect flow to one part of the system or another part, such as a new water tower, ground storage tank, a new transmission water main installation, looping of part of the distribution system, or even new pumps at a booster station or water plant, all of this will change the potential fire flow at given points in the distribution system. An accurate record should be kept of each fire-flow test along with a hydrant inventory. Often utilities or fire departments will color code the hydrants according to the NFPA standards to reflect the fire flow conditions at each hydrant location so that in a fire emergency, the fire department will know what the flow conditions will be.

### Personnel and equipment needed for each flow hydrant

1. One hand held Pitot tube or diffuser with a pitot tube with a pressure gauge capable of reading from 0 to 60 psi. Higher pressure gauges may be needed depending on the operating pressure of the distribution system.
2. One outlet-nozzle cap that will fit the outlet nozzle of the residual hydrant. The outlet-nozzle cap is equipped with a pressure gauge capable of reading from 0 up to 60 psi, greater than the pressure expected in the residual hydrant.

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## EVERYONE IS DEFINITELY "DIGGING INDIANA"

By Chuck Muller, Indiana Underground Plant Protection Service

There isn't any doubt; the 2006 Dig Season is here, and we are setting records.

### The Good News:

More people than ever are calling before they excavate. Insuring your vital infrastructure is not damaged during construction.

### The Bad News:

More people than ever are calling before they excavate. The additional tickets we send out can be a burden to already strained budgets.

Currently, on over 99% of the calls we take, we are able to identify the location of the excavation on our map. We then select the address range on the street segment that corresponds to where the excavation is taking place. The quality of the address range data varies depending on whether it is a rural area, and whether or not a County has a GIS program. In rural areas, on roads without bridges or other geo-coded structures this address range data may cover a whole mile.

Based on industry standards we put a 200' buffer around the address range street segment. This buffer sometimes will cross over county or municipal boundaries. Whether or not you receive the ticket from IUPPS is dependent on if your service area polygon and the dig-site polygon overlap.

### What can you do?

Understanding how our software works, and proper maintenance of your Service Area are vital to reducing unneeded Locate Requests being sent to you by IUPPS.

As a member of IUPPS you create a service area by drawing where your facilities are on our on-line mapping system. This can either be your entire service area (a big polygon) or you can reduce it to street level. Obviously the smaller you can make your service area the less likely the dig-site polygon will overlap it.

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## HYDRANT FLOW TESTING (Continued)

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3. A ruler to measure the inside diameter of the outlet nozzle of each flow hydrant. If a diffuser is being used, the diameter of the diffuser will need to be used.
4. One hydrant wrench to operate the residual hydrant and one to operate each of the hydrants at which the flow will be measured.
5. One person to read the gauge on the residual hydrant and one person to read the gauge on the Pitot tube or diffuser for each of the flow hydrants.
6. Clipboards and sheets for recording data at each hydrant.
7. For wet-barrel hydrants, it may be necessary to install a specially designed nozzle to minimize turbulence caused by the discharge valve.

### Office planning prior to field testing

Review distribution system maps and determine which hydrants will be used to measure flow and which will be used to measure static and residual pressures. All hydrants should be at approximately the same elevation, or test results may have to be corrected for elevation. Notations of water tower water levels should be noted as well. Review previous tests to estimate the flow and pressures that can be expected. It is usually a good idea to start at the water source such as the water plant, well, water tower or ground storage tank. This will help minimize the amount of debris stirred up in the water mains as a result of flushing, but may not entirely eliminate it.

Because of the potential for stirring up debris and causing discoloration of water in the mains, the customers should be notified. Use the local cable channel, run an article in the local paper explaining the goals of the project as well as the process, set out signs in the areas where flushing is going to be conducted, and the utility may also choose to door tag areas a few days in advance to warn residents of possible dirty water. This will reduce the amount of calls to the utility for complaints.

Select a day for testing when consumption will be normal and the weather is predicted to be reasonably good. Notify the operating division of the time and location of the tests so they can make necessary adjustments. Investigate traffic patterns, as testing

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## EMERGENCIES – ARE YOU PREPARED??

A tornado strikes....your water facility or system is damaged....what do you do?

An ice storm takes out power to your water facility for several days.....what do you do?

A break occurs to the main connection between your plant and your tower....immediately draining both....what do you do?

A flood engulfs your wellfield or an accidental chemical spill contaminates your wellfield....what do you do?

You are injured or suddenly fall ill and can not communicate with your employees or your utility board....what do they do?

In any of the above scenarios....what happens to your customers that are depending upon you and your water system to provide them with safe drinking water?

We've all been bombarded with the possibility of terrorist threats or someone deliberately tampering with your utility. For the most part, however, the biggest threat to any water system comes from everyday events. It is critical that we are all prepared.

Now is a good time to get out your Emergency Response Plan (ERP)....dust it off, and really take a hard look at the content.

Can you even find it? IDEM inspectors expect you to be able to produce it in 3 minutes or less.

Are the phone numbers and emergency contacts still valid?

Does it work for your system? A number of water systems just went thru the motions of creating an ERP to meet the mandates handed down by EPA. A lot of the ERPs were created with very little input from the operators and those responsible for the operation and maintenance of the utility. Everyone at your utility and your utility board needs to be involved and TAKE OWNERSHIP of YOUR ERP.

Have you built your emergency response team? Other than your employees and utility board, you need to determine who else would be integral to meeting emergency challenges....IDEM (your local inspector, the Drinking Water Branch, counter-terrorism) ....local law enforcement....local health department....potable water sources while your system is down....local emergency management agency....contractors....laboratories....neighboring water systems....local homeland security district council....anyone that your utility could count on in a pinch. Get to know these folks well before you need them to respond to your emergency. Let them know you would like them to be a part of your emergency response team and make sure they will do this and are taking ownership of their role in your ERP. It does no good to list them if they are not aware of your expectations or have not agreed to help.

Your ERP can be your system's lifeline in any given emergency situation....as long as everyone knows where it is and are familiar with the procedures and contacts it contains.

Do they?....You might consider running a mock disaster drill to "test the water" (so to speak).

Emergency Response Planning does not have to be burdensome or overwhelming. You know your system better than anyone. You know what it takes to operate it effectively on a day-to-day basis. You know the resources in your community and surrounding area. Take the time to make your ERP work for your system....not a cookie cutter version of some generic plan. Know it....take ownership of it....promote it to everyone involved....review and update it regularly. Hopefully you will never need it....but one day you and your system may be extremely glad you took the responsibility to develop a good workable Emergency Response Plan.

Resources that offer guidance on what to consider for your ERP:

EPA Response Protocol Toolbox: [www/cfpub.epa.gov/safewater/watersecurity/home.cfm?program\\_id=8](http://www/cfpub.epa.gov/safewater/watersecurity/home.cfm?program_id=8)

EPA Water Security: [www.epa.gov/watersecurity](http://www.epa.gov/watersecurity)

Indiana Division of Homeland Security: [www.in.gov/idhs/planning](http://www.in.gov/idhs/planning)

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## EVERYONE IS DEFINITELY "DIGGING INDIANA" (Continued)

*(Continued from page 6)*

### What are we doing?

We are exploring the concept of using parcel data in our next generation of One Call software. This will give us the ability to zero in on an address so we can select just the parcel instead of the entire address range for the dig-site. Availability of parcel data will be on a county by county basis.

We are actively trying to obtain improved mapping data from those counties where it is available

We are also training our Damage Prevention Specialists to be aware of the problems facing our membership.

IUPPS is dedicated to providing you, our members with the best service available. If you need assistance with your service area please give us a call at 317-893-1404. After all we work for you.

## ENERGY COSTS ON THE RISE AND SAVINGS AVAILABLE TO YOUR UTILITY - ENERGY EVALUATIONS AND PUMPING SYSTEMS

By: Jeff Hoshaw; Peerless Midwest, Inc.

In our busy lives and jobs we tend to be bombarded with information on many different topics and issues related to work and life in general. When the list of things you need to do becomes unmanageable, it's hard to see the forest for the trees. I found that to be the case recently after attending a seminar on pumping systems and energy efficiency. Going into the seminar I felt I was too busy for this stuff; besides I learned the basics years ago. I would have much rather been working on the jobs I had to do rather than attending this seminar. It just didn't seem as important or relevant to what I needed to accomplish. Then, after an hour or so something happened, a blinding flash of the obvious. All of the issues we have seen in the past few years regarding energy problems with supply and demand became relevant to my work life. I became aware of how much energy and money is really being wasted in my world -- the world of pumps, motors and system controls. Here's some of what I learned:

Pumping systems account for nearly 20 percent of the world's electrical energy demand and range from 25% to 50% of energy used in certain plant operations. The Department of Energy case studies suggest that a large waste of energy is the result of inefficient system design (i.e. control system inadequacies); as well as pumps, that are misapplied or not maintained. There are people who have been paying attention to energy conservation on a large scale, namely the Department of Energy (DOE) and the Environmental Protection Agency (EPA). They started implementing ways to conserve energy years ago. The history of what they have been doing is beyond the scope of this newsletter, but we'll just say they are serious about energy conservation. I recommend that you take a look at their web site.

In 2004, thirty-three pump manufacturers started an initiative through the Hydraulic Institute (HI) called "Pump Systems Matter" (PSM), which has worked closely with the DOE. The combined efforts of the government agencies and the manufactures have produced good information about what's inefficient, and how to make systems more efficient. They have developed systems that can help us understand energy consumption and conservation as it relates to what we do. For many of us, that's pumping systems, hydraulic components and control methods. That's where the blinding flash of the obvious comes in. I see it every day and to this point did not realize the **significant** saving that can be realized by operating our equipment more efficiently. I always knew we could do better, but after looking closely at the statistics and reading some case studies, I saw that there is real money to be saved with efficient operation of our pumping equipment.

Not only are savings realized through decreased energy consumption, but the life of the equipment is increased dramatically. Life cycle costs (LCC) is a term applied to understanding the real cost of equipment. That would be the initial cost, installation and maintenance, and energy cost. The available statistical information suggests that the energy cost will be anywhere from 33% to 88% of the yearly cost for that pump and motor. If these pumps are run off the best efficiency point (BEP) on the pump curve, your efficiency decreases dramatically. The problem is compounded by poorly designed or maintained pumping systems. Not only do we have the high cost of electrical energy to run the pump or equipment at a less than desired efficiency, but we have a piece of equipment that is being stressed because it isn't operating on, or close to, the design point. Equipment failure is more frequent and maintenance costs increase accordingly. I see many systems that have been changed over the years to accommodate the need for more capacity or processes. I have also seen systems that have pumps that just aren't capable of doing the job -- either because they are under or oversized, poorly maintained, or used for the wrong application. Good system design and control are paramount to proper operation and efficiency.

In today's world of Variable Frequency Drives, Soft Starts and other control options, it is making less sense to use old methods of control. Eliminating the high inrush current for motors and pressure control, by the way of VFD's, is more appealing then ever. The saving are substantial to say the least.

Lastly, the projected energy use for the U.S. from 2000 to 2020 shows that there is an ever increasing critical gap between production and consumption. Energy costs on all levels are increasing. As stewards of our utilities' resources and the consumers of much of the U.S. production of energy, we need to be mindful of how we use these resources.

Take a look at some of the resources available from the Department of Energy and become aware of the real savings available to you. Maybe you'll have an unexpected blinding flash of the obvious. It may save your utility big money.

**AWWA / IRWA  
OPERATOR BOOT CAMP  
August 24, 2006  
Grissom Aeroplex (Apollo Club)  
Peru, Indiana  
For Information: 866-895-4792  
[www.inawwa.org](http://www.inawwa.org) or [www.indianaruralwater.org](http://www.indianaruralwater.org)**

LOOKING FOR A FEW  
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## ANNOUNCING - ANSI/AWWA STANDARDS FOR SMALL SYSTEMS

(\$90 MEMBER, \$135 NONMEMBER) This set would normally retail for \$166 MEMBER/\$248 NONMEMBER)

This set of standards is a selection from over 150 AWWA standards that are considered to be the most relevant to small systems. The AWWA Small System Division made the selection after considering the needs of small systems. Most small systems have groundwater sources, use chlorination as treatment, and need to operate distribution systems. This publication includes Standards A100 Water Wells, B300 Hypochlorites, C651 Disinfecting Water Mains, C652 Disinfection of Water Storage Facilities, and G200 Distribution Systems Operation and Management.

To order this valuable resource: visit [www.awwa.org](http://www.awwa.org) or call 1.800.926.7337.

### MARK YOUR CALENDARS!! (Continued)

(Continued from page 12)

**September 8, 2006** – Indiana Section AWWA – Southeast District Meeting – Connersville, Indiana. Contact: Roger Maynard at 812-218-1512 or [maynard@amwater.com](mailto:maynard@amwater.com); or visit [www.inawwa.org](http://www.inawwa.org)

**September 12, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Fire Station; Scottsburg, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 14, 2006** – Indiana Section AWWA – Central District Meeting – Greenfield, Indiana – held jointly with Indiana Rural Water Association. This District Meeting / Workshop will cover the Stage II DBP Rule and solutions. Contact: Dan Hilton at 317-996-2816 or [dhilton@ccrtc.com](mailto:dhilton@ccrtc.com) or visit [www.inawwa.org](http://www.inawwa.org) or contact: Odetta Cadwell at 317-402-7349; MaryJane Miller at 812-988-6631; or visit the IRWA website at [www.indianaruralwater.org](http://www.indianaruralwater.org) – **NOTE: NEW DATE**

**September 15, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Public Library, Crawfordsville, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 18, 2006** – Water Works Operator Certification Examination submission must be postmarked by this date. Water Works Operator Certification Examination will be given November 2, 2006. Contact: Ruby Keslar, IDEM, 317-308-3305 or [rkessler@idem.in.gov](mailto:rkessler@idem.in.gov)

**September 19, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Aquatic & Recreational Center; Plainfield, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 19, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – City Hall Council Chambers; Kendallville, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 19-21, 2006** - SeptemberFest (wastewater technology) - approved for wastewater contact hours. Contact: Matt Sutton; RapidView/R&R Visual at 800-656-4225 or [www.rapidview.com](http://www.rapidview.com)

**September 20, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Webster Center; Plymouth, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 21, 2006** – Indiana Section AWWA – Northeast District Meeting – Wabash, Indiana. Contact: John Mugford at 260-982-2993 or [jmugford46962@mchsi.com](mailto:jmugford46962@mchsi.com); or visit [www.inawwa.org](http://www.inawwa.org)

**September 24 – 27, 2006** – Indiana Association of Cities and Towns – Annual Conference – Indianapolis, Indiana. Contact: Matt Greller at 317-237-6200 or [www.citiesandtowns.org](http://www.citiesandtowns.org)

**September 26, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Jay-Cee Building at Gresham Park; Lanesville, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 27, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Pavilion at Scales Lake Park; Boonville, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 28, 2006** – Indiana Rural Water Association Workshop – Do-It-Yourself Manhole Repair -- Chandler, Indiana. Contact: Odetta Cadwell at 317-402-7349; MaryJane Miller at 812-988-6631; or visit the IRWA website at [www.indianaruralwater.org](http://www.indianaruralwater.org)

**September 28, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Council Chambers; Lebanon, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**October 1, 2006** – Consumer Confidence Report certification form (this certifies that the CCR was distributed) must be sent to IDEM. For information, please contact Jennifer Wingstrom at 317-308-3287 or [jwingstr@idem.in.gov](mailto:jwingstr@idem.in.gov)

**October 4, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – New City Hall; Greensburg, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**October 5, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Heritage Hall at Hiers Park; Huntington, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

(Continued on page 10)

## HYDRANT FLOW TESTING (Continued)

may affect traffic flow.

### Field procedure for flow tests

1. Make provisions for minimizing traffic interruptions and for adequate drainage of water.
2. Locate the residual hydrant and do the following:
  - a. Flush the residual hydrant to eliminate sediment that may damage the gauge.
  - b. Install the outlet-nozzle cap equipped with the pressure gauge on a hydrant nozzle.
  - c. Open the main valve slowly until air is vented. Close the vent and open the main valve fully.
  - d. Read the gauge. This is the static pressure reading.
3. Locate the flow hydrant(s) and do the following:
  - a. Measure and record the inside diameter of the outlet nozzle from which the flow is measured. Take the measurement to the nearest 1/16 in. (0.159 cm). If you are using a diffuser, use the diameter of the diffuser according to the manufacturer.
  - b. Determine the discharge. At the hydrants used for flow during the tests, the discharges from the open butts are determined from measurements of the diameter of the outlets flowed, the velocity pressures of the streams as indicated by the Pitot gauge readings, and the coefficient of the discharge outlet being flowed as determined from the diffuser coefficient or from the style of the hydrant outlet. There are three styles of hydrant outlets, known as an "A", "B", or "C" outlet. An "A" style outlet has a rounded edge inside the outlet from the hydrant. A "B" style outlet is squared off, and a "C" style outlet actually protrudes partially inside the body of the hydrant. If flow tubes or stream strengtheners are utilized, a coefficient of 0.95 is suggested unless the coefficient of the tube is known. "A" outlets have a coefficient of .9, a "B" has a .8, and a "C" has a .7.
4. Conduct the flow test as follows:
  - a. Station one observer at the residual hydrant and one observer at each flow hydrant.
  - b. Open each flow hydrant slowly until it is fully open. Open one hydrant at a time to avoid a pressure surge.
  - c. When the pressure at the residual hydrant is stabilized, the observer signals the persons stationed at the flow hydrants to take the readings. The readings for residual pressure and the Pitot tube readings of each flow hydrant must be taken simultaneously. The air should be exhausted from the flowing hydrant before the reading is taken. For an accurate reading, hold the Pitot tube in the center of the nozzle with the axis of the Pitot tube opening parallel to the direction of flow. The Pitot tube should be held away from the end of the nozzle at a distance of about half the nozzle diameter.
  - d. Record the residual reading and the Pitot gauge reading at each flow hydrant. Then close the flow hydrants slowly one at a time. Closing a hydrant rapidly causes pressure surge, or water hammer, which could cause a weakened main to fail.

For reasonably accurate test results, the pressure drop between the static and the residual pressures should be at least 10 psi. If the distribution system is strong (as it should be near a supply main) and the pressure drop is less than 10 psi, an additional flow hydrant should be added to the test. Flow should be calculated in the field, so the test can be immediately repeated if results appear to be in error.

Gauges used for testing are sensitive instruments and need to be handled with care. They should be tested regularly against a standard gauge to insure accuracy. If there is any doubt about the accuracy of a gauge, then the gauge should be tested, or replaced with a new gauge. Remember that insurance ratings and distribution system performances are being based on these tests, so extreme care needs to be used in the performance of these tests.

MARK YOUR CALENDARS!! (Continued)

## MARK YOUR CALENDARS!! (Continued)

(Continued from page 9)

**October 11, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Fire Station; Rensselaer, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**October 12, 2006** – Wastewater Operator Certification Exam – Application had to have been postmarked by August 28, 2006. Contact: Heather Tippey Pierce, Wastewater Certification Coordinator; Indiana Department of Environmental Management; 100 N. Senate Ave - Mail Code 65-42; Indianapolis IN 46204-2251; Phone: 317-233-0479; [htippey@idem.in.gov](mailto:htippey@idem.in.gov)

**October 12, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Shelter at Callaway Park; Elwood, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**October 13, 2006** – Indiana Section AWWA – Northwest District Meeting – Rochester, Indiana. Contact: John Hardwick at 219-642-8412 or [jahvwd@netnitco.net](mailto:jahvwd@netnitco.net); or visit [www.inawwa.org](http://www.inawwa.org)

**October 17, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Town Hall Council Chambers; Lowell, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



### Mailing Address:

IDEM, Drinking Water Branch 66-34  
100 North Senate Avenue  
Indianapolis, IN 46204-2251

### Physical Address:

2525 North Shadeland Avenue  
Indianapolis, IN 46219

### COMPLIANCE SECTION CONTACT PERSONS

Al Lao, Chief	317/308-3283
Janet Matthews, Secretary	317/308-3282
Dennis Pace, Secretary	317/308-3282
FAX	317/308-3340

### Total Coliform Rule (TCR)

Sandra DeCastro	317/308-3295
Bridget Murphy	317/308-3286
Katrina Hamilton	317/308-3322

### SOCs, VOCs, Lead and Copper, Waiver Package, Radionuclides and IOCs, Nitrate/Nitrite

Lilia Park	317/308-3297
David Forsee	317/308-3288
V. Lynn Means	317/308-3291

### Interim Enhance Surface Water Treatment Rule (IESWTR) Disinfectants & Disinfection By-Products Rule (DBPR) Surface Water Treatment Rule (SWTR), Total Trihalomethanes (TTHMs), Consumer Confidence Reports (CCRs)

Peter Poon	317/308-3328
Mehul Sura	317/308-3303
Laura Spriggs	317/308-3160

### System Inventory and New System Notification

Sara (Fields) Pierson	317/308-3298
-----------------------	--------------

### Consumer Confidence Reports (CCRs) & Fee Program

Jennifer Wingstrom	317/308-3287
--------------------	--------------

### Data Entry

Janet Matthews	317/308-3282
----------------	--------------

### Database Maintenance/Network Administration/SDWIS

Wayne Wang	317/308-3296
April Swift	317/308-3290
Sara (Fields) Pierson	317/308-3298
Jennifer Wingstrom	317/308-3287
Adrian Lugo-Martinez	317/308-3285

### Other Numbers

EPA Safe Drinking Water Hotline	800/426-4791
IDEM Environmental Helpline	800/451-6027

## Indiana Section AWWA

### Chair

Stan Diamond  
Greeley and Hansen, LLC  
317-924-3380  
317-925-3811 Fax  
[sdiamond@greeley-hansen.com](mailto:sdiamond@greeley-hansen.com)

### Chair-Elect

Dan Hood  
M.E. Simpson Company, Inc.  
800-255-1521  
888-531-2444 Fax  
[danhood@mesimpson.com](mailto:danhood@mesimpson.com)

### Vice Chair

Gale Gerber  
Nappanee Water Utility  
574-773-4623  
574-773-5878 Fax  
[napputilities@yahoo.com](mailto:napputilities@yahoo.com)

### Secretary-Treasurer

Jeff Peters  
M.D. Wessler & Associates, Inc.  
317-788-4551  
317-788-4553 FAX  
[jeffpeters@mdwessler.com](mailto:jeffpeters@mdwessler.com)

### Past-Chair

John Stancati  
South Bend Water Works  
574-235-5646  
574-235-9728 FAX  
[stancat@ci.south-bend.in.us](mailto:stancat@ci.south-bend.in.us)

### Director

Jim Williams  
Peerless-Midwest, Inc.  
574-254-9050  
574-254-9650 FAX  
[pajimi@Lneti.com](mailto:pajimi@Lneti.com)

### Section Staff

Tim Bumgardner  
317-745-1124  
317-745-3136 FAX  
[williams@pmidwest.com](mailto:williams@pmidwest.com)

## District Trustees

### Central District Trustee

Dan Hilton  
317-996-2816 – Office  
[dhilton@ccrtc.com](mailto:dhilton@ccrtc.com)

### Northeast District Trustee

John Mugford  
Town of North Manchester  
260-982-2993 - Office  
260-982-1525 - Fax  
[jmugford46962@mchsi.com](mailto:jmugford46962@mchsi.com)

### Northwest District Trustee

John Hardwick  
Valparaiso City Utilities  
219-462-8412 - Office  
219-477-4254 - Fax  
[jahvwd@netnitco.net](mailto:jahvwd@netnitco.net)

### Southeast District Trustee

Roger Maynard  
Indiana American Water Company  
812-218-1512 - Office  
812-284-3541 - Fax  
[maynard@amwater.com](mailto:maynard@amwater.com)

### Southwest District Trustee

Darrel Heisler  
Indiana American Water Company  
812-853-3356 - Office  
812-853-7553 - Fax  
[dheisler@amwater.com](mailto:dheisler@amwater.com)

Small Systems Committee  
INDIANA SECTION AWWA

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Works Association:  
[www.awwa.org](http://www.awwa.org)

EPA Drinking  
Water Hotline:  
[www.epa.gov/OGWDW](http://www.epa.gov/OGWDW)



## MARK YOUR CALENDARS!!

To add dates to this section,  
contact any Small Systems  
Committee Member.

**Indiana Water Operator Training** for Grandparented Operators – Please visit [www.indianawateroperatortraining.org](http://www.indianawateroperatortraining.org) for a schedule of workshops. *ALL grandparented operators are required to take one of these workshops.*

**August 16, 2006** - Indiana Section AWWA Web Cast on Filtration Optimization. The link for more information is: <http://www.awwa.org/education/webcasts/index.cfm?event=showWebcast&meeting=W609>

**August 22, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – IDEM Southwest Regional Office; Petersburg, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**August 23, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – LMU City Building Board Room; Logansport, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**August 24, 2006** – Indiana Section American Water Works Association / Indiana Rural Water Association – Operator Boot Camp – Grissom Aeroplex (Apollo Club); Peru, Indiana. Contact: Odetta Cadwell at 317-402-7349; MaryJane Miller at 812-988-6631; or visit the IRWA website at [www.indianaruralwater.org](http://www.indianaruralwater.org)

**August 28, 2006** – Application to take Wastewater Operator Certification Exam must be postmarked by this date. Contact: Heather Tippey Pierce, Wastewater Certification Coordinator; Indiana Department of Environmental Management; 100 N. Senate Ave - Mail Code 65-42; Indianapolis IN 46204-2251; Phone: 317-233-0479; [htippey@idem.in.gov](mailto:htippey@idem.in.gov)

**August 29, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Indiana University Research Park; Bloomington, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**August 30, 2006** – Indiana Section AWWA – Southwest District Meeting – Washington, Indiana. Contact: Darrell Heisler at 812-853-3356 or [dheisler@amwater.com](mailto:dheisler@amwater.com); or visit [www.inawwa.org](http://www.inawwa.org)

**September 6, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Fire Station; Lawrenceburg, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

**September 7, 2006** – IDEM Session – Stage 2 Disinfectants and Disinfection By-Products Rule – Council Chambers; Portland, Indiana. Contact: Stacy Jones at 317-308-3292 or [sjones@idem.in.gov](mailto:sjones@idem.in.gov)

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Please visit AWWA's website ([www.awwa.org](http://www.awwa.org)) for additional information regarding continuing education and professional development offerings. Materials and instruction are available through a variety of media, from traditional seminars to online courses, teleconferences, and webcasts.