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April 2018

FYI

Happy Spring from the INAWWA Small Systems Committee! Although the groundhog said there would be only six more weeks of winter, Mother Nature decided to extend it for most of us. However, the birds are singing and the spring flowers have started to bloom, including the state flower, the traffic barrel. It is now time to start restoring locations dug up over the winter and to begin the outdoor projects planned for the year. Summer is right around the corner.

In this Newsletter, your Small Systems Committee has pulled together several articles with a variety of topics. The Committee has included our Warm Weather Checklist. Additional topics for this edition are:

- Lead Sampling Program for Public Schools from the Indiana Finance Authority
- Water Loss Control Requires Accurate Master/Production Meter Testing and Calibration from M.E. Simpson Co., Inc.
- Recap of the 2018 Legislative Session from the INAWWA Water Utility Council
- Drinking Water Branch Updates from IDEM
- OSHA Walking-Working Surfaces and Fall Protection Standards Final Rule from the INAWWA Safety Committee

Please make sure you check out the Mark Your Calendars section for upcoming educational opportunities, and also check the Event Calendar on the Section website at www.inawwa.org.

FYI FROM THE SECTION CHAIR
By Mark Brace, Indiana Section AWWA Chair

Thanks to all who were able to attend the recent Indiana AWWA Section 110th Annual Conference. I hope you enjoyed the technical program and exhibit hall. It is an honor to be elected Chair of the Indiana Section and I look forward to attending the many events throughout the year. It will be great to meet many new people as I attend the upcoming Spring District meetings. I look forward to discussing challenges operators face in the different regions of Indiana. While many issues are similar throughout the state and nation, it is really interesting to learn about local problems and their solutions. The lessons learned from other operators, the resources available at www.inawwa.org and www.awwa.org, the current AWWA Standards, and the AWWA Manuals of Water Supply Practices are key resources to the successful operation of our water and wastewater systems. Please take time to visit the available on-line resources and also please support the great philanthropic endeavors of the INAWWA.

SPRING DISTRICT MEETINGS

The officers of each of the Indiana Section AWWA Districts have been hard at work planning for our 2018 Spring District meetings. Registration information is available on our website (www.inawwa.org). You won’t want to miss out on these opportunities for education and networking close to home.

- Southwest District—Wednesday, May 2, Vincennes Water Utilities WTP, Vincennes
- Southeast District—Thursday, May 3, Indiana American Water Southern Indiana Operations & Training Center, Jeffersonville
- Central District—Wednesday, May 9, Grand Park, Westfield
- Northeast District—Wednesday, May 16, Parkview Field (TinCaps Stadium), Fort Wayne
- Northwest District—Friday, May 18, Cristos, Plymouth
WHAT’S UP WHAT’S NEW - IDEM

By Liz Melvin, IDEM Drinking Water Branch

Happy spring to you all. I’m hoping for a real spring where the spring evolves to summer slowly but consistently. Temperatures slowly rise giving way to summer. Mark Twain describes spring fever so well, “It’s spring fever. That is what the name of it is. And when you’ve got it you want – oh, you don’t quite know what it is you do want, but it just fairly makes your heart ache, you want it so.” Of course Robin Williams had his own description, “Spring is nature’s way of saying, Let’s party!” Either way I’m looking forward to new beginnings. However, unstable weather may also occur when the warm air from the south collides with the cold air pushing down from the north. Flooding and tornados can and do occur in our state. According to the figures reported by the National Climatic Data Center for the period from 1991-2010, the seventeen US states with the highest average number of tornades per 10,000 square miles, Indiana ranked 16th with 6.1. Resiliency is what we’re talking about here. Resiliency is defined as the ability to recover quickly from setbacks, adapt well to change, and keep going in the face of adversity. Are you prepared? Is your emergency response plan up to date? Are you a member of INWARN? We can help. Travis Goodwin is our point person for helping you develop resiliency for your system. Please contact him if you want some help. Our contact information is available in this newsletter.

I’m happy to say that we are about at full staff. We’re hoping to stay that way for a long time. (A girl can dream.) The most current contact information can be found in this newsletter. You can also find our contact information on our web page and our email addresses are easy, first letter of our first name, last name (a max of 8 characters) @idem.in.gov.

Operator Certification

Scores are improving bit by bit. The workgroup is still together and we meet several times a year as a whole group. We have subcommittees working on various projects including reviewing exam questions and developing guidelines for mentors and apprentices. We had 4 examinees who opted for the paper exam in November, but for the most part people seem to be happy with the Ivy Tech test centers. We have also been working with Ivy Tech on the report you receive at the end of the test. What we want is to be able to tell you the specific areas identified as deficient. In this way you should be able to concentrate your studies in those areas.

The operator certification renewals are going out mid-May. If your certification expires June 30, 2018 you will receive a renewal notice. That is of course assuming you have made sure that your information is correct in the database we pull from to send the renewals. We work through the Professional Licensing Agency through their MyLicense program. If you have moved or want your renewal to go to a different address, please make those changes now. If you do not submit your renewal for certifications which expired June 30, 2018, you cannot perform the duties of a certified operator. You have one year’s grace period to recertify without taking an exam, but you are not certified during this grace period. If you go beyond June 30, 2019 without renewing, you will have to retest to be certified. That means submitting the application, fee, and taking the exam. Please make sure we have your correct information. Don’t rely on someone else to submit the necessary paperwork and fees without at least checking to make sure it was submitted on time. It is your certification and it is you who will have to retest if you let the certification lapse.

Inspection Section

Lucio wants to remind you all to look at your MRO form (if you need to submit one) to make sure it meets our current standards. There is a fillable form (form #34609) on our website at http://www.in.gov/idem/5157.htm#owq_cert_education it is fillable but does not do calculations. You can develop your own MRO form. It must contain the essential information, system name, PWSID #, month and year of report, field inspector name, signed and printed name of certified operator, title of signer, certification number of signing operator, and the certification clause attesting to the validity and accuracy of the information contained on the form. You need only use columns that pertain to your system. If you don’t treat for iron, don’t put it on the report. If you don’t add fluoride don’t put it on form. Do put the gallons of water treated, chemicals used, disinfectant residual, monthly water treated numbers. You get the general idea. You can mail it, but we prefer you email it to dwbmro@idem.in.gov; you can fax it, but this appears to be our most unreliable way of receiving information. You need to have your form approved if you decide to develop your own. Simply send it to your field inspector and they will approve it or help you fix it.

The Field Inspection Section under the direction of Lucio is working on a new electronic inspection form. This one should shorten even further the time between inspection and issuing the report. When the inspector calls to set up the survey, please make sure your records are ready for their review.

Ground Water Section

Ever consider adding a local ordinance to protect your source of drinking water? Having an up to date Wellhead Protection Plan is the first step, but alone the WHPP has limited, if any, authority to protect your source of drinking water. Taking protection to the next level through the use of a local ordinance can address concerns before they arise. Adding a Wellhead Protection Ordinance (WHP Ordinance), or zoning overlay, defines the activities, and land uses, that are allowed within a wellhead protection area on a town/city or countywide level. Topics that can be addressed within a WHP Ordinance could be zoning land use activities that may impact ground water, industrial zoning, pesticide and fertilizer use on public properties, and restrictions on installation of underground storage tanks (USTs). The use of a WHP Ordinance assists businesses in knowing what they are required to do to prevent water contamination, gives your community legal grounds to protect your defined Wellhead Protection Area (WHPA), and designates how to protect your WHPA. For more information about WHP Ordinances you can contact Alisha Turnbow (aturbow@idem.in.gov) with IDEM’s Ground Water Section.
WALKING-WORKING SURFACES AND FALL PROTECTION STANDARD: ARE YOU COMPLIANT?

In November, 2016, OSHA published the Walking-Working Surfaces and Personal Fall Protection Systems Final Rule. There were several changes in the requirements for fixed and portable ladders, as well as fall protection systems, such as those used in treatment facilities, tanks and towers. This rule also has clarifications regarding scaffolds, rooftop facilities, railings, manlifs, etc. Generally, Indiana OSHA began enforcing the provisions of this rule on July 1, 2017 (federal OSHA began January 17, 2017). Some provisions have delayed enforcement dates.

The following information came directly from the OSHA Fact Sheet for the rule that was produced prior to the rule being published in the Federal Register. The Timeline section has been updated with the federal OSHA and IOSHA enforcement dates. The original fact sheet, along with additional information, can be found on the U.S. Department of Labor website at http://www.dol.gov. The text of the rule can be found at https://www.osha.gov/walking-working-surfaces/RegTextWWSFinalRule.pdf.

OSHA’s Final Rule to Update, Align, and Provide Greater Flexibility in its General Industry Walking-Working Surfaces and Fall Protection Standard

Background
Falls from heights and on the same level (a working surface) are among the leading causes of serious work-related injuries and deaths. OSHA estimates that, on average, approximately 202,066 serious (lost-workday) injuries and 345 fatalities occur annually among workers directly affected by the final standard. OSHA’s final rule on Walking-Working Surfaces and Personal Fall Protection Systems better protects workers in general industry from these hazards by updating and clarifying standards and adding training and inspection requirements. The rule affects a wide range of workers, from window washers to chimney sweeps. It does not change construction or agricultural standards.

The rule incorporates advances in technology, industry best practices, and national consensus standards to provide effective and cost-efficient worker protection. Specifically, the rule updates general industry standards addressing slip, trip, and fall hazards (subpart D), and adds requirements for personal fall protection systems (subpart I).

OSHA estimates this rule will prevent 29 fatalities and 5,842 lost-workday injuries every year.

The rule benefits employers by providing greater flexibility in choosing a fall protection system. For example, it eliminates the existing mandate to use guardrails as a primary fall protection method and allows employers to choose from accepted fall protection systems they believe will work best in a particular situation — an approach that has been successful in the construction industry since 1994. In addition, employers will be able to use nonconventional fall protection in certain situations, such as designated areas on low-slope roofs.

As much as possible, OSHA aligned fall protection requirements for general industry with those for construction, easing compliance for employers who perform both types of activities. For example, the final rule replaces the outdated general industry scaffold standards with a requirement that employers comply with OSHA’s construction scaffold standards.

The rule phases out a 1993 exception for the outdoor advertising industry that allows “qualified climbers” to forego fall protection. At least three workers have fallen from fixed ladders under this exception. One of them died. The final rule phases in the fixed ladder fall protection requirements for employers in outdoor advertising.

Fall Protection Options
The rule requires employers to protect workers from fall hazards along unprotected sides or edges that are at least 4 feet above a lower level. It also sets requirements for fall protection in specific situations, such as hoist areas, runways, areas above dangerous equipment, wall openings, repair pits, stairways, scaffolds, and scaffolding platforms. And it establishes requirements for the performance, inspection, use, and maintenance of personal fall protection systems.

OSHA defines fall protection as “any equipment, device, or system that prevents a worker from falling from an elevation or mitigates the effect of such a fall.” Under the final rule, employers may choose from the following fall protection options:

- **Guardrail System** – A barrier erected along an unprotected or exposed side, edge, or other area of a walking-working surface to prevent workers from falling to a lower level.
- **Safety Net System** – A horizontal or semi-horizontal, cantilever-style barrier that uses a netting system to stop falling workers before they make contact with a lower level or obstruction.
- **Personal Fall Arrest System** – A system that arrests/stops a fall before the worker contacts a lower level. Consists of a body harness, anchorage, and connector, and may include a lanyard, deceleration device, lifeline, or a suitable combination. Like OSHA’s construction standards, the final rule prohibits the use of body belts as part of a personal fall arrest system.
- **Positioning System** – A system of equipment and connectors that, when used with a body harness or body belt, allows a worker to be supported on an elevated vertical surface, such as a wall or window sill, and work with both hands free.
- **Travel Restraint System** – A combination of an anchorage, anchorage connector, lanyard (or other means of connection), and body support to eliminate the possibility of a worker going over the unprotected edge or side of a walking-working surface.

(Continued on page 4)
WALKING-WORKING SURFACES AND FALL PROTECTION STANDARD
(continued from page 3)

- **Ladder Safety System** – A system attached to a fixed ladder designed to eliminate or reduce the possibility of a worker falling off the ladder. A ladder safety system usually consists of a carrier, safety sleeve, lanyard, connectors, and body harness. Cages and wells are not considered ladder safety systems.

**Rope Descent Systems**
The rule codifies a 1991 OSHA memorandum that permits employers to use Rope Descent Systems (RDS), which consist of a roof anchorage, support rope, descent device, carabiners or shackles, and a chair or seatboard. These systems are widely used throughout the country to perform elevated work, such as window washing.

The rule adds a 300-foot height limit for the use of RDS. It also requires building owners to affirm in writing that permanent building anchorages used for RDS have been tested, certified, and maintained as capable of supporting 5,000 pounds for each worker attached. This mirrors the requirement in OSHA’s Powered Platforms standard.

**Ladder Safety Requirements**
Falls from ladders account for 20 percent of all fatal and lost work-day injuries in general industry. The new rule includes requirements to protect workers from falling off fixed and portable ladders as well as mobile ladder stands and platforms. (The ladder requirements do not apply to ladders used in emergency operations or ladders that are an integral part of or designed into a machine or piece of equipment). In general, ladders must be capable of supporting their maximum intended load, while mobile ladder stands and platforms must be capable of supporting four times their maximum intended load. Each ladder must be inspected before initial use in a work shift to identify defects that could cause injury.

- **Fixed Ladders** – Fixed ladders are permanently attached to a structure, building, or equipment. These include individual-rung ladders, but not ship stairs, step bolts, or manhole steps. The new rule phases in a requirement for employers to have ladder safety or personal fall arrest systems for fixed ladders that extend more than 24 feet, and phases out the use of cages or wells for fall protection under the following timeline: Starting in two years, all new fixed ladders and replacement ladder/ladder sections must have a ladder safety or personal fall protection system. For existing ladders, within two years, employers must install a cage, well, ladder safety system, or personal fall arrest system on fixed ladders that do not have any fall protection. Within 20 years, all ladders extending more than 24 feet must have a ladder safety or personal fall arrest system.

- **Portable Ladders** – Portable ladders usually consist of side rails joined at intervals by steps, rungs, or cleats. They can be self-supporting or lean against a supporting structure. The final rule will be easier for employers and workers to understand and follow because it uses flexible performance based language instead of detailed specification and design requirements. Under the revisions, employers must ensure that: rungs and steps are slip resistant; portable ladders used on slippery surfaces are secured and stabilized; portable ladders are not moved, shifted, or extended while a worker is on them; top steps and caps of stepladders are not used as steps; ladders are not fastened together to provide added length unless designed for such use; and ladders are not placed on boxes, barrels, or other unstable bases to obtain added height.

**Training Requirements**
The rule adds a requirement that employers ensure workers who use personal fall protection and work in other specified high hazard situations are trained, and retrained as necessary, about fall and equipment hazards, including fall protection systems. A qualified person must train these workers to correctly: identify and minimize fall hazards; use personal fall protection systems and rope descent systems; and maintain, inspect, and store equipment or systems used for fall protection.

When there is a change in workplace operations or equipment, or the employer believes that a worker would benefit from additional training based on a lack of knowledge or skill, then the worker must be retrained. The training must be provided in a language and vocabulary that workers understand.

**Timeline**
The final rule became effective on January 17, 2017, which was 60 days after publication in the Federal Register. IOSHA began enforcement July 1, 2017. OSHA also provided delayed or phased-in compliance dates for several requirements in the final rule, including:

- Training workers on fall and equipment hazards – OSHA: May 17, 2017; IOSHA: November 9, 2017;
- Inspection and certification of permanent building anchorages – OSHA: November 20, 2017; IOSHA: May 9, 2018;
- Installation of fall protection (personal fall arrest systems, ladder safety systems, cages, wells) on existing fixed ladders (over 24 feet) that do not have any fall protection – OSHA: November 19, 2018; IOSHA: May 9, 2019;
- Installation of ladder safety or personal fall arrest systems on new fixed ladders (over 24 feet) and replacement ladders/ladder sections – OSHA: November 19, 2018; IOSHA: May 9, 2019;
- Installation of ladder safety systems or personal fall arrest systems on all fixed ladders (over 24 feet) – OSHA: November 18, 2036; IOSHA: May 9, 2037.

Additional information Additional information on OSHA’s rule on walking/working surfaces and personal fall protection systems can be found at www.osha.gov/walking-working-surfaces. OSHA can provide extensive help through a variety of programs, including technical assistance about effective safety and health programs, workplace consultations, and training and education.
WATER LOSS CONTROL REQUIRES ACCURATE MASTER / PRODUCTION METER TESTING AND CALIBRATION
By: Michael Simpson and John H. Van Arsdel, M.E. Simpson Co., Inc.

Water Loss Control Requires Accurate Master/Production Meter Testing and Calibration—Know how much water your utility is truly putting into your distribution system each day by testing and calibrating flowmeters to control water loss.

The ability to accurately measure the water conveyed to a water distribution system is key to that utility’s ability to control its water losses. No matter the size of the water system, accurate master/production meters leads to effective water loss control.

This also applies to water systems who sell water to neighboring water systems. “Export meters” are the water supply meters for the receiving water system.

WATER MEASUREMENT ESSENTIALS
Water systems aren’t designed to lose money, so properly metering finished water is a critical first step in the process of water loss control and a key component of the water audit.

Water-supplied volume is made up of three components: water produced at a treatment plant and put into the distribution system, water purchased wholesale from a supplier, e.g., a neighboring water utility or water commission, and any water sold wholesale to another water utility. Some water utilities will perform all three functions of this scenario; others may only perform one or two of them. Water that’s bought and sold wholesale is termed custody transfer volumes.

The meters used to measure finished water at the custody transfer points between water utilities measures and records flow—the same functions meters perform at a home or business. Therefore, the meters need to accurately measure and totalize the flows.

MASTER/PRODUCTION METER CONSIDERATIONS
Flowmeters must be chosen carefully to ensure they can perform those two functions correctly. Meter sizes must be matched to the anticipated volume flowing past each meter’s location. The chosen location for flow measurement must have the correct layout to properly measure flow. The selected meter must allow for periodic testing and calibration to ensure the meter performs within accepted accuracy limits specific to its type.


Various types of meters are used in water production and wholesale applications. These can be classified as differential pressure meters (Venturi meters, Dall tubes—a modified Venturi, orifice plates, and others), mechanical meters (turbine, propeller), insertion meters (Pitot tubes, insertion magnetic meters), magnetic-style flow-through meters, and ultrasonic meters (strap-on and flow-through). Each style has certain characteristics related to use, accuracy, ranges, and costs. When meters are chosen for installation, certain tradeoffs must be considered as no meter will be completely accurate across the full range of flows to which it may be subjected. So, meter selection is very important.

Meter Testing Locations. To measure flow properly, a meter should be set in a location where conditioned flow enters the meter’s measuring element. As detailed in the table on page 315 of AWWA’s Manual of Water Supply Practices M36 Water Audits and Loss Control Programs, Fourth Edition, the required lengths of straight, unobstructed flow upstream and downstream of the meter setting vary with meter type and manufacturer.

Testing and Calibration. A dedicated place for periodically flow testing a meter for accuracy may not exist. Given that many meter settings for production facilities and wholesale connections are compromised, the chances of having a good location for an accuracy test in place is unlikely. Some water utilities have never tested their production meters. Some that do test don’t follow accepted flow-testing norms. Although production meters can be tested to ensure they meet accepted accuracy limits, there’s often an absence of accuracy criteria.

MASTER/PRODUCTION METER ACCURACY GOALS AND LOGISTICS
The suggested accuracy ranges for meters included in M6 cover a limited number of meter types and are for testing in a meter shop under controlled conditions. These aren’t accuracy “standards” per se, but they’re considered “best practices” and have been agreed on as acceptable limits within the water industry. A meter can be removed from a setting and shipped to a meter shop for flow accuracy testing. But what about meters that can’t be removed and tested on a test bench?

In many cases, removing a meter from its setting for testing isn’t a good practice because it’s impractical. For example, it would be hard to periodically remove a 72-in. Venturi meter and ship it to a facility for flow testing. The cost and logistics of removing/reinstalling such a large meter make it impractical to do so. Many smaller water systems have chosen to remove smaller turbine or propeller meters and ship them to a testing facility. They don’t realize the meter setting may be compromised. The meter may pass a meter shop’s tests but be inaccurate in its setting due to bad setting configurations.

(Continued on page 9)
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<td>Travis Goodwin</td>
<td>TGOODWIN1</td>
<td>775-5473</td>
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**FAX NUMBERS**

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<td>Permit, Ground Water, Inspection</td>
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All phone numbers are area code 317 unless otherwise indicated.
To email employees at IDEM, take their user ID (located between their name & phone number) followed by @idem.in.gov

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**(NRO)=Northern Regional Office
(SWRO)=Southwest Regional Office
(SERO)=Southeast Regional Office
(NWRO)=Northwest Regional Office**

3/20/18
LEAD SAMPLING PROGRAM FOR SCHOOLS
By: Staci Orr and Erica Walker, Indiana Finance Authority

Program Description
The Indiana Finance Authority ("IFA"), with assistance from the Indiana Department of Environmental Management ("IDEM"), has developed the Lead Sampling Program for Public Schools to help schools discover leaded fixtures and plumbing materials within their facilities.

The voluntary program has 916 schools enrolled, from 152 school districts, across 71 counties and is currently estimated to reach over 478,000 students in Indiana Public Schools.

IFA has contracted the Indiana Geological & Water Survey to sample from any fixtures that are used for drinking or cooking water, in buildings where students are present. The goal of the program is to protect student health by identifying and remediating lead sources in Indiana’s public schools.

When results at or above 15 ppb (parts per billion) are found, schools are called immediately to discuss remediation options. To date, 100% of schools with exceedances have communicated to us that they have addressed or are in the process of addressing all problematic fixtures. We encourage schools to share sampling results with their water supplier.

Preliminary Findings
Early results suggest that, while the majority of schools have lead exceedances (52%), typically only a few fixtures at each school are problematic (4%). Faucets (specifically classroom faucets and bubbler/faucet combinations) are the most common source of lead (80% of all exceedances) in the program to date. In many cases, facility staff report low water use from the affected faucets, which could partially explain the elevated concentrations we are observing.

Timeline
The enrollment period has closed and all sampling will be completed by June 2018. A final report will be prepared and issued by January 2019. For more information, please visit: www.in.gov/ifa/2958.htm or email: IFALead@ifa.in.gov.

WHAT'S UP WHAT'S NEW—IDEM (continued from page 2)

Chemical & Surface Water Compliance Section
• CCR Updates: The 2017 Consumer Confidence Reports are now available on IDEM's Drinking Water Watch website. https://myweb.in.gov/IDEM/DWW/ Per CCR regulations, PWSs that sell water need to submit their drinking water information to all of their purchase water systems by April 1st.
• Disinfection Byproducts (DBPs) – Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) Update: Systems that chlorinate or purchase chlorinated water should contact Peter Poon if they don’t know which month they are required to sample (or how many samples to collect). You can contact Peter at 317-234-7441 or ppoon@idem.in.gov.

Revised Total Coliform Rule
You can find the final rule at http://www.in.gov/legislative/iac/iac_title?iac=327&iaca=8&submit=Go go to 327 IAC 8-2-7 of the rule. The IDEM web site has information for you about the rule requirements, IDEM information and instructional and training guides for system owners and operators. There are presentations that walk you through Level 1 and Level 2 assessment requirements. There are templates for site sampling plans, information on seasonal systems, along with general information on the RTCR. Two years after the rule went into effect we are seeing a lot more Level 1 and Level 2 assessments. These assessments must be completed and turned in to IDEM. You must follow the guidelines for conducting the assessments. You must make a concerted effort to look at the system to determine the cause of the positive bacteriological sample. You must complete the training if you plan to do Level 2 assessments.

Where to find information
Our drinking water web page found at http://idem.in.gov/cleanwater/2381.htm has most everything you need. If you can’t find it call us. Really, we are happy to help. Remember an ounce of prevention is worth a pound of cure, prevention is better than cure, life is 10% what happens to you and 90% how you react to it, luck is great, but most of life is hard work.
WATER LOSS CONTROL (continued from page 5)

In-Situ Meter Testing. Testing a meter in its setting offers several advantages: It’s practical if the proper test conditions can be met. The meter gets tested under the conditions in which it’s used and the meter setting can be evaluated. Unfortunately, no hard-and-fast rules exist for field testing large production meters. Field testing can pose some disadvantage because a meter may already be in a compromised setting, flows may be limited, and those performing the tests have to “settle” for what they can get on-site given current conditions. The key is to have a test site where the meter can be tested year after year and repeatability can be established. The methodology of the testing must be solid, established in procedure, and acceptable to the utility dependent on the test results to be able to quantify water use for auditing reports.

Various methods of testing flowmeters in place have been practiced for years. Smaller turbine meters and propeller meters that have test ports for a controlled isolated comparative flow test should be used following established and accepted testing methodologies. Meters should be tested under controlled circumstances and across several flow rates. High flows may not be attained, because of the size of the test port used for the comparative test. Conversely, low-flow tests can be compromised if the isolation valves leak through.

Large-Meter Testing. For larger meters, such as Venturi meters and large mag meters, insertion meters (Pitot tubes, insertable mag meters) have been used to flow test the meter on-site. Usually the meter doesn’t have to be taken out of service, but the test is limited by the flows currently going through the meter. Pitot testing has been used for more than 100 years and has a long track record of high accuracy and repeatability. Strap-on ultrasonic-style meter testing has become popular because nothing has to be inserted into the flow. A drawback to this style of testing is that the inner diameter of the pipe can’t be measured to a high degree of accuracy if turbulence is present inside the pipe. Also, proper test site settings (proper upstream and downstream straight pipe runs) are needed to be able to provide conditioned flow for this type of test.

With the insertable style of testing, usually the inside diameter is measured with a caliper, and flow profile is determined by measuring velocity of flow at several even increments through the pipe diameter at that given location. This allows the tester to “see” what the flow profile is at the test site. Flow profiles have a big effect on meter performance and the performed testing. Pitot testing also needs several pipe diameters upstream/downstream of unobstructed flow to produce reliable results. Flow testing using either method needs repeatability and needs to be performed over a suitable test interval to reliably gather enough data to calculate master/production accuracy. Advantages of testing in this manner are the testing instruments are portable and the flow measurements can be conducted over longer periods of time, such as 24 hours or even a few days.

Comparative Testing. Another way to check a flowmeter’s accuracy is to compare flows with those of another meter that’s already installed upstream or downstream of the meter in question. This method is usually performed with water plant meters rather than custody change meters. Drawdown tests can be used where tank levels are monitored and compared with metered volume. This takes a more disciplined approach, but it’s practical in cases where a portable flow test meter can’t be used.

Some larger utilities will routinely conduct a “mass balance” to verify flowmeter accuracy. Meters used in the water treatment plant process get compared with one another, and adjustments are made for process water use along the way.

SCADA Matching. Utilities should monitor their supervisory control and data acquisition (SCADA) systems during any flowmeter testing. Readings at the flowmeter and the test data may match, but the SCADA system at the operator’s desk doesn’t match the flowmeter. By taking readings from the SCADA system during the flow tests, meter accuracy testing can help pinpoint data stream issues. SCADA systems aren’t all the same and many are hybrid systems in which instruments and other input-output devices have been added to the data load. By cross-checking the manual readings at the flowmeter, the test data taken with the flow-test instruments and the SCADA readings, testers can determine where corrections are needed.

MASTER/PRODUCTION METR TESTING BEST MANAGEMENT PRACTICES

Water utilities need to have their master/production meters’ flow-tested at least annually. In the absence of any rule that requires annual testing, it makes good business sense to perform the testing to ensure meter accuracy. AWWA best management practices, as outlined in M36, recommends testing master/production meters annually. This is a critical part of your annual water audit. How the water audit process ends ultimately depends on how it is started. That’s why it’s crucial to perform master/production wholesale meter testing accurately and regularly.

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INDIANA MEMBER WINS 3RD PLACE IN GIMMICKS & GADGETS CONTEST

The Indiana Section is proud of our member, Tom Sheline, water superintendent with Topeka Utilities. Tom submitted the RAT (Repurpose-a-Tool) to the annual AWWA Gimmicks and Gadgets contest. Below is the article included in the October 2017 edition of Opflow (www.awwa.org/opflow), and reprinted with permission. Congratulations, Tom!!

The RAT (Repurpose-a-Tool) Improves Curb Stop Access

BY TOM SHELINE

Finding techniques to help maintain infrastructure that could be a century or more old in some districts is an ongoing challenge. When a common distribution system maintenance problem requires a reliable response, however, water professionals can often find creative solutions.

As the water superintendent in the town of Topeka, Ind., I found myself unable to turn the curb-stop water Valve off at an older home in town because of an undersized arch-type curb-stop box. None of the current curb-box keys would insert into the curb box to access the valve extension rod. Digging up the valve box during the winter wasn’t an option I wanted to explore, so I decided to make my own tool that would fit inside the narrow vertical curb-box pipe and allow closing of the valve.

Coined “the RAT” (Repurpose-a-Tool), the tool I fashioned is from a simple lug-nut wrench. Made from good-quality steel, the lug-nut wrench can take a lot of torque without twisting or breaking. It’s also small in diameter, so it will easily insert into tight spaces. It was the best choice and the easiest tool to repurpose with little cost and minimal labor.

CONSTRUCTION AND USE

To build the RAT, place the lug wrench into a vise, heat the shaft with a torch at the bend, and straighten it. Next, use a hacksaw to cut the shaft off at the bottom edge of the open square, leaving the notch on the straightened shaft and eliminating the pointed part of the lug wrench.

Find an %25/64-in. nut the correct size as the socket and tack-weld it in place. Screw the desired length of bolt into the nut, then finish by welding the bolt to the nut and the nut into the socket. If desired, add a quick coat of paint. Finally, you have those “Oh no, my regular curb-box wrench won’t fit” situations.

BENEFITS

The RAT prevents unnecessary excavation of a curb-box valve, especially in an emergency shut-off situation. This handy, low-cost tool saves valuable time, labor, and money.

Editor’s Note: In the 20- plus years Sheline has worked in the municipal water industry, he has also designed and built several other items to assist himself and his crew with daily distribution system operation and maintenance tasks. Among his inventions are a fire hydrant meter support stand, for which he received an Honorable Mention in the 2010 Opflow Gimmicks & Gadgets Contest (see www.awwa.org/publications/opflow/abstract/articleid/23969.aspx). He also built a fire hydrant lifter and, out of a discarded dry hydrant, a truck hitch-mounted fire hydrant flushing diffuser with dechlorination capabilities.

MATERIALS AND COST

- Standard automotive lug wrench ................................................. $12.99
- One %5/64-in. hexagon nut .................................................. $0.95
- One 5/8-in. x 4-in. bolt .................................................. $1.32
- One 12-oz can of spray paint .................................................. $1.69

Cost $16.95

Construction time 1 hour
RECAP OF THE 2018 LEGISLATIVE SESSION

Water Utility Council (WUC) met prior to the INAWWA Annual Conference on January 22nd to review and discuss legislation pending before the Indiana General Assembly during the 2018 session. There were three main areas of focus for WUC during the session: (1) to support an effort to form a water task force during 2018 that would have members appointed by the Governor to focus on critical issues facing the water industry including proposals on how to fund the cost of aging infrastructure across the state, (2) continued support of the evolving work of the Indiana Finance Authority (IFA) to monitor and study water issues as a complimentary role to their management of dollars such as the state revolving fund (SRF) which many operators depend on for low cost project financing, and (3) WUC participation in a broad coalition to argue against the need for legislation that would effectively result in a mandate to use PVC piping on public works projects.

The 2018 session ended on March 14th with legislative success in all three identified areas as described below:

1. There were multiple versions of the water task force considered during the session and in the end a compromise bill was developed in House Bill 1267 which passed without opposition. The bill authored by Representative Ed Soliday of Valparaiso and sponsored in the Senate by both Senator Ed Charbonneau of Valparaiso and Senator Jim Merritt of Indianapolis creates a defined structure for the Governor to form a task force. There is no limit to the size of the task force but it must include at least one representative from a utility operator in the area of water, wastewater, or storm water, at least one person representing a professional with expertise in designing or constructing systems, at least one person representing ratepayer stakeholders, and at least one person representing the general public. Because the industry is so diverse it is likely each category will have multiple appointed members. In addition the Governor may appoint state employee representatives from key state agencies as he deems appropriate.

2. The governing statutes for IFA were re-organized in House Bill 1374 and WUC worked diligently to ensure the hard work of the past 6 years on water policy, much of which done in partnership with the IFA serving as an independent 3rd party participant, was maintained. Although earlier versions of 1374 repelled major parts of IFA water assignments, the final bill that passed the legislature left the role of IFA in water public policy unchanged.

3. Partially through the efforts of WUC, House Bill 1271, which would have changed requirements for selecting piping materials of public works projects to essentially mandate cheaper materials such as PVC pipe, did not receive a hearing in the House and therefore did not pass. This is the second year in a row that such a bill has been filed. The INAWWA Board has taken a strong stance against such bills under the theory that the current system at the local level is working fine and proper selection of materials should remain a local decision made on a project by project basis. House Bill 1271 was also opposed by ACEC, AIM, and the ductile pipe lobby among others.

MARK YOUR CALENDARS!! (continued from page 12)

June 6, 2018 – Indiana Section AWWA – Wine into Water (and Beer Tool) – Fundraiser for WFP – South Bend, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

June 7, 2018 – Indiana Rural Water Association – Operator Symposium North – Culy Contracting; Winchester, Indiana. Contact: Odetta Cadwell at 317-402-7349; Monique Riggs at 317-372-9864; or MaryJane Peters at 866-895-4792 (toll free); or visit the IRWA website at www.indianaruralwater.org

June, 2018 – Water Buffalos – Ride With Purpose To Benefit Water For People – Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org 
Note: Sponsorship deadline May 1, 2018

June 12 – 14, 2018 – AWWA Annual Conference and Exposition (ACE’18) – Las Vegas, Nevada. Contact: www.awwa.org

June 19, 2018 – Indiana Rural Water Association – Day At The Wastewater Plant; Monticello, Indiana. Contact: Odetta Cadwell at 317-402-7349; Monique Riggs at 317-372-9864; or MaryJane Peters at 866-895-4792 (toll free); or visit the IRWA website at www.indianaruralwater.org

June 28, 2018 – Indiana Rural Water Association – Operator Symposium South – Utility Supply Co.; Huntingburg, Indiana. Contact: Odetta Cadwell at 317-402-7349; Monique Riggs at 317-372-9864; or MaryJane Peters at 866-895-4792 (toll free); or visit the IRWA website at www.indianaruralwater.org

July 5, 2018 – InAWWA Annual Golf Outing (to benefit Water For People) – Indianapolis, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

July 28, 2018 – Sunset Cruise in Syracuse To Benefit Water For People – Syracuse, Indiana. Contact: InAWWA at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

August 2 – 3, 2018 – Alliance of Indiana Rural Water – Leadership Summit – Bloomington, Indiana. Contact: Laura Vidal at 888-937-4992 or visit the Alliance website at www.inh2o.org

August 8, 2018 – Indiana Rural Water Association / Indiana Section AWWA – Operator Boot Camp – Miami County Fairgrounds; Peru, Indiana. Contact: Odetta Cadwell at 317-402-7349; Monique Riggs at 317-372-9864; or MaryJane Peters at 866-895-4792 (toll free); or visit the IRWA website at www.indianaruralwater.org or the InAWWA website at www.inawwa.org
MARK YOUR CALENDARS!!

April 28, 2018 – Indiana Section AWWA / Indiana WEA Young Professional—Keep Indy Beautiful Volunteer Event – Indianapolis, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

May 2, 2018 – Indiana Section AWWA – Southwest District – Spring Meeting – Vincennes, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

May 3, 2018 – Indiana Section AWWA – Southeast District – Spring Meeting – Jeffersonville, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

May 3, 2018 – Indiana Section AWWA / Indiana WEA – Young Professionals / Engineers Without Borders Social Event – Indianapolis, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

May 9, 2018 – Indiana Section AWWA – Central District – Spring Meeting – Westfield, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

May 16, 2018 – Indiana Section AWWA – Northeast District – Spring Meeting – Tin Caps Game, Ft. Wayne, Indiana. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

May 17, 2018 – Alliance of Indiana Rural Water – Southern Operator Expo – Huntingburg, Indiana. Contact: Laura Vidal at 888-937-4992 or visit the Alliance website at www.inh2o.org

May 18, 2018 – Indiana Section AWWA – Northwest District – Spring Meeting – Plymouth. Contact: Dawn Keyler at 866-213-2796 (toll free); or visit the InAWWA website at www.inawwa.org

May 24, 2018 – Alliance of Indiana Rural Water – Northern Operator Expo – Akron, Indiana. Contact: Laura Vidal at 888-937-4992 or visit the Alliance website at www.inh2o.org

June 5, 2018 – Indiana Rural Water Association – Hydrants & Valves Workshop; Ashley, Indiana. Contact: Odetta Cadwell at 317-402-7349; Monique Riggs at 317-372-9864; or MaryJane Peters at 866-895-4792 (toll free); or visit the IRWA website at www.indianaruralwater.org

(Continued on page 11)