Technical Assistance Bulletin

How Time Goes By

By: Don Craig, Deputy Director

June 2011
VOLUME 15 ISSUE 2

This past April 16th, marked the date, 26 years ago, I started work for Illinois Rural Water Association. I worked nearly 3 years as the only Circuit Rider in the still 'young' organization. In 1988 I went to work for the National Rural Water Association in a new program. And, even though I worked for NRWA in some additional areas, I've always worked in the State of Illinois. Two years ago this month, I accepted an offer to come back to IRWA, to begin working in the newly developed position of Deputy Executive Director.

It's good to be back with IRWA, and I truly appreciate the great support and trust of Executive Director Frank Dunmire, the Board, the Staff, and all of you that continue to be a part of a very good and viable organization.

To say the least, the years have flown by, and I've seen a lot of growth and changes not only for IRWA, but of all the state affiliates within the National Rural Water Association. As many of us within the rural water organization have aged together through the ever passing years, I thought I'd take a 'lighter' look at getting older.

To say the least, the years have flown by, and I've seen a lot of growth and changes …..

You know you're getting older when.....

- Everything hurts and what doesn't hurt, doesn't work
- The gleam in your eyes is from the sun hitting your bifocals
- You feel like the night before, and you haven't been anywhere
- Your little 'black book' contains only names ending in M.D.
- You get winded playing chess
- Your children begin to look middle-aged
- You reach the top of the ladder, and realize it's leaning against the wrong wall
- You join a health club, but never go
- You begin to outlive enthusiasm
- You decide to procrastinate, but never get around to it
- Your still chasing women, but can't remember why
- Your mind makes contracts your body can't meet
- A dripping faucet causes an uncontrollable bladder urge
- You know all the answers, but no one asks you the questions
- You look forward to a dull evening
- You walk with your head held high, trying to get used to your bifocals
- Your favorite part of the newspaper is "25 Years Ago Today"
- You turn out the light for economic rather than romantic reasons
- You sit in a rocking chair and can't make it go
- Your knees buckle, and your belt won't
- Your regret all those mistakes resisting temptation
- You're 18 around the neck, 44 around the waist, and 106 around the golf course
- You stop looking forward to your next birthday
- After 'painting the town red', you have to take a long rest before a second coat
- Dialing a long distance number, wears you out
- You're startled the first time you are addressed as an 'old-timer'
- You remember today, that yesterday was your anniversary
- You just can't stand people who are intolerant
- The best part of the day is over, when your alarm goes off
- You burn the 'midnight oil' after 9 PM
- Your back goes out, more than you do
- A fortune teller offers to read your face
- The little gray-haired lady you help across the street is your wife
- You get exercise as a pallbearer for your friends who exercise
- You have too much room in the house, and not enough in the medicine cabinet

And last but not least, you know you're getting older when.....

You sink your teeth into a delicious steak, and they stay there.....

IRWA'S MISSION STATEMENT

"Protecting and preserving the water and wastewater resources of Rural Illinois through education, representation and on-site technical assistance"

Reflections
By: Mark Mitchell, Source Water Protection Specialist

Monday, April 17, 1995: How many remember why that day is a "red-letter" day for me?
I would assume only me. I started a new job that day 16 years ago as a Well Head Protection Technician for the Illinois Rural Water Association (IRWA). But unbeknownst to me and most of the rest of the world something else was happening that you do remember or soon would know…

On April 17–18, 1995, Timothy McVeigh and Terry Nichols removed their supplies from their storage unit in Herington, Kansas, where Nichols lived. At 9:02 am CST, on April 19, 1995 the Ryder truck, containing in excess of 4,800 pounds of ammonium nitrate fertilizer, nitro methane, and diesel fuel mixture, detonated in front of the north side of the nine-story Alfred P. Murrah Federal Building in downtown Oklahoma City, OK. Hundreds of people were killed or injured. One third of the building was destroyed by the explosion which created a 30-foot wide, 8-foot deep crater on NW 5th Street next to the building. The blast destroyed or damaged 324 buildings within a sixteen-block radius, and shattered glass in 258 nearby buildings. The broken glass alone accounted for 5% of the death total and 69% of the injuries outside the Murrah Federal Building. The blast destroyed or burned 86 cars around the site, causing sympathetic detonations from the vehicles' gas tanks and tires. The destruction of the buildings left several hundred people homeless and shut down multiple offices in downtown Oklahoma City. The explosion was estimated to have caused at least $652 million worth of damage. The effects of the blast were equivalent to over 5,000 pounds of TNT and could be heard and felt up to 55 miles away. Seismometers at Science Museum Oklahoma in Oklahoma City, 4.3 miles away, and in Norman, Oklahoma, 16.1 miles away, recorded the blast as measuring approximately 3.0 on the Richter scale.

The Oklahoma City bombing was the deadliest act of terror against the U.S. on American soil until the September 11, 2001 attacks and to this day remains the single deadliest act of terror by "homegrown nuts".

The effects of this act of terrorism will be burned into our brains for many years to come. For me, the fear was personal. Within a few days of starting my brand new job with IRWA, I was to fly to the National Rural Water Association (NRWA) Headquarters in Duncan, OK for orientation and training. This flight was to Lawton, OK via Dallas, TX. What was I supposed to think? How should I feel? Was there a danger in traveling in Oklahoma for this rube from the Midwest who had never traveled much, much less flown anywhere? For all of us, this act of terror brought questions and change. Was this a single act of terrorism or was it just the beginning of more to come? Do we need to change the way we conduct our day to day business? Is that box van a family moving or someone with malice in their heart and murder on their mind? With each terrorist act, we lose a little more of our confidence in our fellow man.

Well it turns out I did travel to Duncan, OK and returned home safely and the worst that happened to me on that trip was a case of the intestinal flu! During that week of orientation, I learned how to be a Well Head Protection Specialist (or so they told us and thus I thought so!) I learned that sometimes connecting flights don't always connect. I learned that when this happens, they don't send another airplane to pick you up. You wait until the next one comes that is going to where you need to go. Most of all, that week, my world started expanding a little bit. I learned how the NRWA supports and assists its state affiliates nationwide. I saw the need for IRWA to be out in the field assisting water supplies by providing training and technical assistance. I discovered that other people were scared and unsure what was going on in this great country of ours, as well. That week was just the beginning of what I have learned while working at IRWA. In the autumn of 1995, the staff of IRWA traveled to Atlanta, GA for the NRWA Annual Technical Conference. Before we left we were instructed that due to funding cuts, not to expect to have a job upon returning to Illinois from Atlanta! We weathered that storm by hard work, telephone calls and lots of begging and pleading on the part of a lot of people. We have weathered storms since then and we are fighting to regain funding even now. I firmly believe we will continue to fight to maintain funding levels in the future.

I also learned that there were other opportunities within IRWA. For a time I worked under an Illinois Environmental Protection Agency funded program to conduct potential source inventories and use the information gathered to write Source Water Assessment Fact Sheets. In 2001 I started as the USEPA Funded Source Water Protection Specialist and when that funding channel dried up the first time, I switched to a USDA-FSA Funded Source Water Protection Specialist position. Through the years we all have to learn to adapt, change and grow. I like to think that I learn at least a little something every day!

What I want to emphasize is that people of the United States of America, as citizens of our respective communities and especially as water/wastewater system operators, we adapt.

It was just a couple years before the Oklahoma City bombing that an act of terror was carried out (less effectively than what would eventually take place on September 11, 2001) on the World Trade Center in New York City. Then in 2001 we learned another lesson. Terrorists also adapt! There was no way for me to know in 1995 that my very means of transportation to Duncan, OK would in just a few short years become a weapon used against the citizens of the United States! We often fear the unknown more than the known.

When you arrive at your treatment plant expecting a normal day of operations, and instead you discover that sometime during the night, a leak has developed, a pump is down, a well has become non-functional or many other things that can and do go wrong, you adapt. You identify the problem, prioritize what must be done and then proceed to adapt from what you were **planning** to do that day, to what you **must** do that day. On a larger scale, due to systems having less than necessary funds to complete necessary tasks, you have had to adapt to doing the same amount or even more with less resources. Systems have less money, less equipment and saddest of all less manpower. Everywhere we go these days, the story is the same… "We can't hire our part-time summer help, we can't replace people who leave,

(continued on page 3)

and we can't hire operators to help us cover our weekends!" As we visit your systems, however, we see that the work is getting done and that means the operators have adapted. You are prioritizing your tasks and each one of you is shouldering more of the burden and what **must** be done **is** getting done.

We at IRWA come from that same water/wastewater operations background and in the face of funding crises that you are well aware of, we too will adapt. As long as we continue to receive any level of funding to keep our programs running, you will see the staff at IRWA adapt their approach to continue to provide you, the water/wastewater operators of Illinois, the best training and technical assistance possible. I know this because for 16 years I have worked with the best bunch of people you could hope to work with. Reflecting back over the years and thinking about what I wanted to share for this article, I realized that things are much different than when I started, yet we don't notice it so much. Why? It is because we adapted. Maybe it was only a little bit one day, a bigger change another day or maybe it was a major change, but we adapted.

We are a different nation than we were before April 19, 1995 and little did we realize that something on a much more grandiose scale would take place on September 11, 2001, but we continued to adapt.

We as water/wastewater operators will continue to adapt to an ever changing world and ever changing threats. Before September 11, 2001, none of us knew what a vulnerability waiver was nor could we most likely spell it, pronounce it or imagine it. Now it is a part of our everyday life. What is a contingency plan or emergency response plan? Before September 11, 2001 it was only something that a "large" supply needed. Today I would wager that any system operator has heard the term at least once and if you have worked more than a few months have either developed or updated one. Who can say what tomorrow will bring, much less another 16 years? But one thing I will guarantee, as long as this world is still intact, water/wastewater system personnel will find a way to adapt to whatever is thrown at them.

Will I still be writing articles for IRWA in another 16 years? It doesn't really matter to anyone except me, just like I am the only one who remembers why April 17, 1995 is a "red letter" day for me. The thing I am certain of… water/wastewater system personnel of this great nation will still be providing the important services they provide today, no matter how much they have to adapt. The only thing that is certain is change!

Low pH? Good or Bad
By: Chuck Woodworth, Circuit Rider

A measure of the acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity. That is the scientific definition of pH. We all know that pH is a standard measurement used to measure a liquid's acidity or alkalinity on a scale of 0 to 14. A pH greater than 7 represents alkalinity, 7 denote neutral, and less than 7 indicates acidity (the lower the number, the higher the acidity). The pH measurement represents the intensity of the acid, whereas titratable (total) acidity measures the volume of acid. A low pH depends on if you are producing wine or producing drinking water.

The desirable pH range for table wines is approximately 3.0 to 3.6. As the pH level drops below 3.0, the wine becomes unpleasantly sharp; above 3.6 and it becomes flat and flabby. Even though the volume of acidity might be in the proper range, if the pH is too high or too low, the wine won't be well balanced. Every wine drinker likes a well balanced wine. Low pH also deters bacterial growth (which translates to better aging) and helps wine keep its color. Winemakers use pH, along with other factors such as grape ripeness and volume of acid, to help determine the resulting wine's potential quality. If you are planning to start making wine at home, you really need to understand how to control the pH.

So, what does pH mean for water? Just like wine, water needs a well balanced pH to enhance its potential quality. Basically, the pH value determines whether water is hard (scale forming) or soft (corrosive). The pH of pure water is 7. In general, water with a pH lower than 7 is considered acidic, and with a pH greater than 7, basic. The normal range for pH in surface water systems is 6.5 to 8.5 and for groundwater systems 6 to 8.5. Alkalinity is a measure of the capacity of the water to resist a change in pH that would tend to make the water more acidic. The measurement of alkalinity and pH is needed to determine the corrosiveness of the water. The above ranges are text book numbers, I would recommend a range of 8.0 to 8.5 in the finished water.

In general, water with a low pH (less than 6.5) could be acidic, soft, and corrosive. Therefore, the water could contain metal ions such as iron, copper, lead, and zinc. This can cause premature damage to metal piping, do you find that your copper service lines are pitting and beginning to leak, have you had positive hits for lead and or copper. The primary way to treat the problem of low pH water is with the use of a neutralizer. The neutralizer is a solution feed into the water to prevent the water from reacting with the household plumbing or contributing to corrosion. A typical neutralizing chemical is soda ash. There are plenty of different chemicals on the market that will raise or lower your pH as needed. If you don't currently test your finished water for pH levels, I would suggest that you purchase some type of pH measuring device and test it on some kind of regular schedule.

Water with a pH greater than 8.5 could indicate that the water is hard. Hard water does not pose a health risk, but can cause aesthetic problems. These problems include an alkali taste to the water (making that morning coffee taste bitter!), formation of a deposit on dishes, utensils, and laundry basins, difficulty in

Illinois Rural Water Association
3305 Kennedy Road
P.O. Box 49
Taylorville, IL 62568
217-287-2115

QUALITY ON TAP!

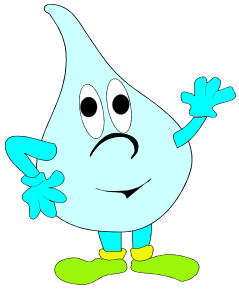
Staff Members

Executive Director
Frank Dunmire (dunmire@ilrwa.org)
Deputy Director
Don Craig (craig@ilrwa.org)
Membership Services Assistant
Heather McLeod (ilrwahm@ilrwa.org)
Administrative/Program Assistant
Denise Burke (ilrwadb@ilrwa.org)
EPA Training Specialist
Wayne Nelson (ilrwawn@ilrwa.org)
Circuit Rider #1
Gale Moore (moore@ilrwa.org)
Circuit Rider #2
Patricia "Pat" Gammill (gam@ilrwa.org)
Circuit Rider #3
Chuck Woodworth (ilrwacw@ilrwa.org)
Wastewater Technician #1
Bill Dowell (dowell@ilrwa.org)
Wastewater Technician #2
John Bell (ilrwajb@ilrwa.org)
USDA Source Water Protection Specialist
Mark Mitchell (mitchell@ilrwa.org)
USEPA Source Water Protection Specialist
Kathy Rodgers (Rodgers@ilrwa.org)

Website: www.ilrwa.org

getting soaps and detergents to lather, and formation of insoluble precipitates on clothing.
To display the range in pH, take a look at these examples:

- Battery Acid- 1
- Vinegar- 2
- Orange Juice- 3
- Tomato Juice- 4
- Coffee- 5.5
- Milk- 6.2
- Distilled Water- 7
- Sea Water- 8
- Baking Soda- 9
- Milk of Magnesia- 10
- Ammonia- 11
- Soapy Water- 12
- Bleach- 13



Remember to check out our website, www.ilrwa.org, for the latest training sessions to register for!!