



IEHA Digest

*Idaho Environmental Health
Association*

October 2014



President's Message [Patrick Guzzle, IEHA President]

When Dianne and I had been married about 4 years, we bought our first house. It still stands on a busy corner in Pocatello (1205 N Arthur for those of you familiar with Pocatello). The house was originally built in 1930 but it had been completely refurbished before we bought it. I have a lot of fond memories of that house as we ended up living in it for about 8 years. Whenever I'm in Pocatello, I make it a point to drive by it and reminisce a little. The house sits on a block with several other houses built around the same time. Most of those homes, at the time we lived there, were also occupied by the owners. As you can imagine, many of those neighbors were older than Dianne and I were and we initially felt a little awkward trying to introduce ourselves to them. But as time went on, we got to know the homeowners around us and some of their stories. I'd like to share a little about some of those fine people that lived with us in that block. All of the names have been changed, but the stories are real.

Jane Sanders lived two doors north of our house. She had lived in her house for most of her adult life and had seen a lot of changes in our little neighborhood. Her husband had passed away several years earlier and all of their children were grown and lived in other areas of the country. She said that it was fun to have small kids living in the neighborhood again (we moved when our youngest boy was just a baby) and she enjoyed watching as our two older boys learned to ride a bike on the sidewalk in front of our houses.

Across the street from us lived Frank and Elizabeth Brown. The Browns had also lived in their house for most of their adult lives and their children were also grown. Unlike Jane, though, the Brown's children all still lived in Southeast Idaho. My oldest son would sometimes stand by our chain link fence and wave across the street to Mr. Brown (cue Dennis the Menace yelling "Hey Mr. Wilson"). Mr. Brown was retired but had worked his full career as a Physical Facilities manager at Idaho State University. He helped me install a new dryer vent one afternoon which turned out to be a bigger adventure than I had planned. Because the house was built in 1930, the siding was the old asbestos tiles and who knows how much time I took off my life by drilling through those tiles that day! We still receive Christmas cards from the Browns.

Also across the street from us lived Joe and Nancy White. Joe's mother lived in the same block and he was actually born in that house. Joe frequently went to check on his mom and I was privileged to get to know each of them. I would sometimes shovel the walk in front of Mrs. White's house if Joe wasn't able to make it over.

Right behind our house lived Dave and his wife. Unfortunately, I can't remember their last name. To be honest, I just always knew him as Dave. Right after we moved in to the house, Dave came over and told me that he was glad to have neighbors again but a little sad that he was losing his personal archery

range. When I asked what he meant, he explained that when the house was vacant, he would set up a target on the long strip of lawn that was just south of the house and shoot archery.

During the 8 years that we lived in that house, we learned a lot about our neighbors and their lives. We also learned a lot about ourselves. We came to rely on them to keep an eye on our house when we would leave for vacations and we returned the favor for them when they were gone. When I think back to those days, I sometimes wonder what our little block would have been like without those good neighbors. Dianne and I came to understand that our willingness to introduce ourselves with those around us led them to reciprocate and, together, we were able to rely on each other when necessary.

Our involvement with the Idaho Environmental Health Association is very similar – in other words, when we are willing to be involved, share our talents and resources with those around us, and participate actively, we learn that others are also willing to reciprocate those efforts. During the past few years, environmental health in Idaho has been losing some highly skilled professionals due to retirements. I know that some of these folks won't mind my naming them, but we've lost the likes of Bob Jue, Dale King, Bob Hays, and others. I look back on what I learned from people like these and I will fondly remember the discussions that we've had over the years.

During the next few years, we will see others retire and their loss will be felt not only by the agencies and organizations where they are employed, but by IEHA as well. As I have watched others retire (I'm still 20 years away from that point myself), I have also been able to see other highly skilled environmental health professionals begin a career in the field we have all chosen. To those newer staff members, my message is this: become involved! IEHA needs you and you will benefit from being involved with IEHA. To those of you who have been around awhile, I also say the same! During the upcoming 2015 IEHA Education Conference (March 18 – 19 in Boise), there will be many opportunities for you to become involved. I urge all of us to strongly consider those opportunities and let's work together to make IEHA an even stronger organization. Like the little neighborhood where Dianne and I bought our first house, there are many of you that have unique experiences and we can all benefit by knowing about those circumstances better – and you'll gain professional rewards for your involvement too!

*The IEHA Conference is March 18th
& 19th, 2015 at the Student Union
Building at Boise State University.*

*If you have a topic you want to
present, please contact Tyler
Fortunati at:
tyler.fortunati@deq.idaho.gov.*



Developing a Maintenance Program for Small Wells [LeRoy Palmer, Ameriwest Water Services]

A good well preventative maintenance program, consisting of regular monitoring can limit or slow down well deterioration. Maintenance treatments based on the monitoring results are the natural pro-active approach to helping your wells avoid a life of slime.

Years ago, my neighbor taught me a valuable lesson on the importance of maintenance. The victim of his neglect was his yellow Dodge. Those were the years before red lights or flashing messages warned us to change our oil. He was busy and went months and months without changing the oil. I still wonder what he was thinking, but the inevitable result was a ruined engine and the loss of a good vehicle.

I'm sure you don't wait until the oil light comes on in your vehicle to get an oil change. Why should we maintain our wells any differently? Long term well maintenance could be one of the most neglected aspects of well field operations. This "well neglect" likely stems from the well owner's lack of knowledge about wells, groundwater and the complexities of chemistry and microbiology. It has long been my effort to address the critical maintenance and best practices for well operation and maintenance, so everyone will know how to care for their valuable water resources.

Before we look at what we need to do right, let's look at what usually goes wrong in a well.

Why good wells go bad. Declining well production is a fact of life with water wells. Well production can drop off over time due to blockage of well casings, well screens and the adjacent water-bearing formations. The bottom line is that increased movement of water toward the well causes blockages. These blockages or incrustations take the form of biological, chemical and/or mechanical plugging. As a result, all wells need to be properly maintained regardless of the sand, gravel, limestone or sandstone formations where drilling occurred.

1. Mechanical or Physical Incrustation describes the plugging which occurs when silt and clay size particles in the aquifer move toward the well during pumping. Silt and clay can also be leftover problems of poor new well construction and development. If left behind during construction, drill mud will cause blockage resulting in less area of the screens where water can enter the well.

2. Mineral Incrustation occurs when mineral scale forms around the well bore when the well is inefficient or is pumped at too high velocities. The draw down created by pumping the well causes a reduced pressure in the aquifer, which releases carbon dioxide gas (CO₂), from the water. This CO₂ deficiency causes a chemical imbalance forcing dissolved minerals in the water like calcium, and magnesium to form insoluble scale. Additionally, iron, manganese and sulfates may also precipitate

3. Biological Incrustation occurs when wells are populated with slime bacteria, sulfate using bacteria or one of several genera of iron related bacteria (IRB). These organisms form a slimy gelatinous matrix of polysaccharide polymer material that enhances their attachment to the surface, nutrient capture and

protection of the cells. They feed off dissolved minerals in the water that are ultimately deposited in the form of hydroxides. The organic slime matrix combined with mineral deposits can form tastes and odors and greatly reduce the pumping capacity of a well in a short period of time.

Following is a look at most of the useful recommendations for a good well maintenance program

Recommendations for your well maintenance program.

1. Create a well and pump inspection record with the following information: Well owner, Well Name or ID #, Type of pump and horsepower. Be able to record the following before operation and after startup: Static water level, Voltage each leg, Amp reading each leg,
2. After Startup record GPM at a fixed time (minimum 30 minutes) from startup, the PSI or Head on the distribution system and the drawdown pumping water level
3. A very valuable measurement is Specific Capacity or the gallons per minute the well produces divided by the drawdown pumping water level.
4. Inspect the wellhead several times a year for cracks or entry points in the casing and well cap.
5. Look, listen and feel for any unusual sights, sounds or vibrations.
6. Track water production with energy use, noting that any unexpected changes or increases over time could indicate that the pump is working harder.
7. Gather information from the well log or drilling report.
8. Long term maintenance requires having a qualified driller do an inspection of the well which should include a camera inspection of the casing and screens. The driller can help you do a flow test to determine system output, pump motor performance and pressure tank issues.
9. Please don't think a gallon of Clorox is the answer to all well problems. Chlorine should never be used without a buffered enhancer that keeps the pH at about 6.5.

Water Testing Recommendations.

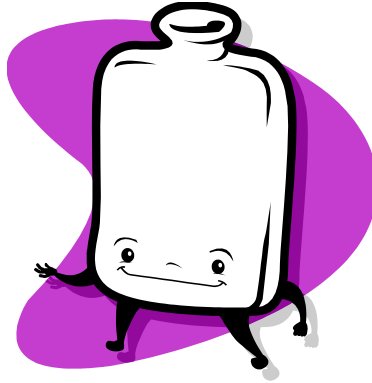
1. Test drinking water immediately if there is no recent test or previous records.
2. Bacteria tests like total coliform and total plate counts are important.
3. Nitrates are recommended if you live in or near agricultural areas or have a septic system.
4. Test for contamination after any flooding in or near the well.
5. AmeriWest Water Services has tried to reduce the costs of well testing for the small water systems like a home owner or for a church or business on a well. We have partnered with a nationally recognized engineering group with extensive laboratory services named Water Systems Engineering. We have put together an impressive list of chemical and biological tests that can give the well owner very critical information on the health and productivity of their well for under \$200. Do these tests yearly can protect your water well investment and provide important health testing.

We call it the "AmeriWest Basic Well Evaluation" and it includes pH, alkalinity calcium, conductivity, total dissolved solids, chloride, Langlier Saturation Index, total iron, total manganese, anaerobic bacteria, sulfate reducing bacteria ATP and microscopic evaluation. The well data comes with a paragraph at the end of the report that summarizes the data and points out anything serious.

Well maintenance should be a planned and budgeted process of testing, inspecting, treatments and repairs that will maintain well performance and water quality so rehabilitation can be postponed or unnecessary. Even small well owners now have the tools they need to keep their wells healthy and their water safe.

For comments or questions contact LeRoy Y Palmer

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Idaho's Statewide Ground Water Quality Monitoring Program

[Ken Neely, Technical Hydrogeologist, IDWR]

The Ground Water Quality Protection Act, passed by the Idaho State Legislature in 1989, authorized a comprehensive approach for maintaining and improving Idaho's ground water quality. In 1990, the Idaho Department of Water Resources (IDWR), with help from other state and federal agencies, began the Statewide Ground Water Quality Monitoring Program. The Statewide Program provides valuable information about Idaho's ground water quality to private citizens, consulting companies, and governmental entities.

The objectives of the Statewide Program are to:

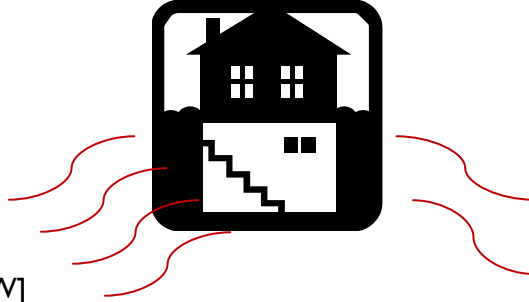
1. Characterize the ground water quality of the state's major aquifers.
2. Identify trends and changes in ground water quality.
3. Identify potential groundwater quality problem areas.

In 1991, funding was increased significantly which enabled the monitoring network to grow at a rate of about 400 sites per year from 1991 through 1994. By the fall of 1994, the Statewide Program network included over 1,500 monitoring sites. Most sites have been sampled for bacteria, nutrients, common ions (calcium, magnesium, etc.), trace elements (iron, arsenic, lead, etc.), pesticides, volatile organic compounds, and radioactivity.

For 21 years, IDWR and the U.S. Geological Survey worked as partners in the Statewide Program. Due to the economic challenges of 2008, IDWR reduced Statewide Program monitoring, and finally assumed full responsibility in 2012. Currently, about 225 wells are sampled each year.

The Statewide Program results indicate that most of Idaho's ground water is suitable for human consumption, and for beneficial uses such as aquaculture, irrigation, stock watering and industrial applications. Certain constituents, such as arsenic, nitrate, fluoride, and radioactivity, have elevated concentrations with some of them exceeding safe drinking levels. The southern part of the state has more impacts from these constituents than the northern part.

To look up information on these wells, go to <http://maps.idwr.idaho.gov/map/edms>.



Radon [Megan Keating, IDHW]

Radon comes from the breakdown of uranium and it occurs naturally in soil. It is odorless, tasteless and invisible. Exposure to high levels of radon can be dangerous. According to the Surgeon General, it is the leading cause of lung cancer among non-smokers and causes more than 20,000 deaths each year in the United States. The best thing you can do to protect yourself from lung cancer is to quit smoking. The second best thing is to make sure you do not have high radon levels in your home. Nearly half (40%) of the homes tested for radon in Idaho have high radon levels, so it is important to test your home. Winter is the best time to test your home for radon. It is also recommended that you test for radon on the lowest livable area of your home (i.e. a living room or basement bedroom). To order a radon test for your home or to view frequently asked questions about radon visit www.radonidaho.org.

While high radon levels are most often found in indoor air, it can also be found in private well water. It is most important for you to test your indoor air for radon and if you own a private well you may want to test your well water for radon as well. Analysis for radon in well water can be tested by Eurofins Eaton Analytical, Inc. for \$100 per sample. For radon in water sampling guidelines please visit these [instructions](#). If you have additional questions on radon please call the Idaho Indoor Environment Program at 1-800-445-8647.



Bat Myths

There are still a lot of myths and misunderstanding surrounding bats.

The term "blind as a bat" is far from appropriate. Bats can see as well as most mammals. They also have a biological sonar system called echolocation. This allows them to navigate and hunt fast-flying insects in total darkness. The bat emits a deep-like sound into its path. It then collects and analyzes the echoes that come bouncing back. This allows them to find insects and avoid obstacles as fine as a human hair.

Many people still consider bats "flying rodents". While they are mammals, they belong to their own order called Chiroptera. They are actually more closely related to human biology than to rodent biology.

There are 14 species of bats in Idaho and all are insectivores. They are actually an important source of pest control for many farmers. While there is a "vampire" bat species, the three species are all located in Latin America. Only one actually targets mammals. Ironically the anticoagulant found in the vampire bat saliva has been developed into a medication that can prevent strokes in humans.

Bats are not carriers of rabies. Like all mammals, they can be infected with the virus. If infected, they will eventually die after becoming sick. The infection rate of bats is similar to other species, 1%.

For information on excluding bats from a building, check out the Bat Conservation International website at www.batcon.org.

Thanks to Bat Conservation International, Idaho Fish & Game, University of Idaho, and Bureau of Land Management for the information.

Updates from around the state

New employees at the Public Health Districts:

Eastern Idaho Public Health has two new Environmental Health Specialists. Jarryd Samples is covering for Lemhi and Custer counties. Vincent McHenry is inspecting food establishments in Fremont, Madison, and Teton counties.

Southwest District Health has a new Environmental Health Specialist, Senior for Land Development. Tim Wright joins SWDH from another health department in Ohio.

Central District Health Department has 3 new staff members working in the food safety program in Ada County. Scott Paradis is coming from Whitman County Public Health from Eastern Washington. He was born in Pocatello, raised in Nampa, and has a BS in Environmental Sciences from U of I. Joseph Antonucci is originally from Cape Cod, Massachusetts. He worked as a Dangerous Goods Agent for Fed Ex and a Ramp Agent for Delta Airlines while earning his Environmental Health degree from BSU. Eleanor Jones has a BS in Health Science from ISU. For seven seasons, she worked for the Department of Interior as a Range Technician and worked on a National Incident Management Team as a Base Camp Manager and Food Unit Leader on large wild fire incidents in Idaho.

Also, congratulations to Brigitta Gruenberg for being promoted to EHS Senior in the Public Drinking Water Program at CDHD and Brian Crawford to EH Director at SWDH.

*Idaho Environmental Health Association
www.ieha.wildapricot.org*