

SOUTH DAKOTA RURAL WATER'S

Quality On Tap!

July 2016 | Volume 12, Issue 1

**MANAGING LAWNS
TO PROTECT
WATER QUALITY**

**BOATING
SAFETY**

**GEOLOGY AND
SOUTH DAKOTA
RESOURCES**

CRYSTALLINE ROCK AQUIFERS

A MESSAGE FROM THE PRESIDENT OF THE BOARD

Ron Gillen, President
South Dakota Association of Rural Water Systems



Golf Tournament

Join us on July 29th for the 30th Annual SDARWS 4-Person Scramble Golf Tournament at Elmwood in Sioux Falls. The tournament is a great opportunity to gather together with other Rural Water folks for a day of camaraderie and fun. You can register your four-person team online at www.sdarws.com/golf.html. All golfers need to be registered at the course by 8:30am. Shotgun start is at 9:00am. We hope to see you on the course!

License Plates

SDARWS is pleased to announce that we have license plate decals for your South Dakota Emblem Specialty License Plates for \$25 (2 decals). Proceeds from the sale of these decals will go to the Rural Water Center Research Center. Decal orders will be mailed out as soon as we receive our emblems from the SD Department of Motor Vehicles. Ask your county treasurer's office for the non-profit/organizational plates. Emblem plates, if acquired during your regular renewal period, do not require an additional application or fee outside of your regular registration fees. If the plate is acquired outside of your renewal period, there is an additional \$10 fee. If you have questions, please call the Madison office at 605-556-7219.



Water Pro

It isn't too early to start thinking about attending this year's WaterPro Conference in Orlando, Florida September 12-14, 2016. NRWA puts on a fantastic show which brings in hundreds of vendors and hosts informative training sessions in operations, management, boardmanship and governance for those involved in water and wastewater utility systems – large and small, municipal and rural. This year NRWA is adding villages to their exhibit hall. The Villages are an area designated for interactive demonstrations, hands-on learning, networking and discussion on a specific topic. These are learning opportunities unlike anything offered before at the WaterPro Conference. The three villages currently scheduled are Locks and Physical Security, Rapid Response and Recovery and Smart Technology. For more information on this conference, including registration and hotel reservations, please visit www.waterproconference.org.

STATE & NATIONAL RURAL WATER ASSOCIATION'S
WaterPro®
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SEPT. 12-14
ShingleCreek Resort
ORLANDO!
National Rural Water Association
GROUNDWATER PROTECTION COUNCIL

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Class C
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CERTIFICATION CHANGES

By Jim Zeck, SDARWS Training Specialist

Some major changes will be occurring in the certification training program beginning July 1, 2016. These changes are in response to feedback we have received from operations specialists over the years that the South Dakota Department of Environment and Natural Resources (SD DENR) has incorporated into our training contract.

Some courses will not be changing that much, they include the following:

- Small Water Treatment Workshop (2/year)
- Advanced Water Treatment (1 every other year)
- Advanced Wastewater Treatment (1 every other year)
- Basic Water Treatment (3/year)
- Intermediate Water Treatment (2/year)

The remainder of the courses will see significant changes. First is the Wastewater Collection/Water Distribution Course. This course will be separated into two courses, i.e. no longer will we cover both topics in a single course.

The Wastewater Collection Course will become a standalone 2 ½ day course. We will be doing three of these per year. This change will allow us to better cover the material and also to incorporate more advanced topics. We will also have more time to cover some of the math at a slower pace.

The Water Distribution Course will also become a 2 ½ day

course with the same benefits as the Wastewater Collection Course. Many operators who wish to take a class II or higher level exam have commented that they would like to have more advanced material. By making this a full 2 ½ days we will now have the time to cover the Class I material and expand into Class, II, III & IV material. We will also be doing three of these courses throughout the year.

Finally the Basic Wastewater Treatment Course will be split apart into three one-day Stabilization Pond Workshops and two Wastewater Treatment Courses. The one day pond workshops will cover most of the material needed for a person wishing to take the stabilization pond exam. The new Wastewater Treatment Course will again be a 2 ½ day course allowing us to cover class I through III wastewater treatment topics. We will be offering two Wastewater Treatment Courses per year.

Operators will want to make note of these changes. No longer will we cover much stabilization pond material in the wastewater treatment course. Operators who are used to getting the stabilization pond material in the old basic wastewater treatment course may be disappointed when they find we will be spending less than ½ hour covering pond material in the new Wastewater Treatment Course.

If you have any questions on certification training courses, call SDARWS at 605-556-7219, or Rob Kittay, Secretary of the Board of Operator Certification at 605-773-4208



Events Calendar

JULY

12-14 – Basic Water Treatment

This course covers the Association of Boards of Certification “Need to Know” requirements for the Class I & II Water Treatment Exams. Class begins each morning at 8:00am local time and wraps up around 4:30pm on Tuesday and Wednesday and approximately 11:30am on Thursday.

Aberdeen Ramkota

1400 8th Avenue NW, Aberdeen SD 57401

19 – 30th Annual Rural Water Open

Shotgun start at 9:00am. \$60/golfer includes lunch, cart, and 18 holes of golf. Register online at www.sdarws.com/golf.html.

Elmwood Golf Course

2604 Russell Street, Sioux Falls, SD 57104

AUGUST

9-11 – Water Distribution

This course covers the Association of Boards of Certification “Need to Know” requirements for the Class I through III Water Distribution Exams. This course only covers the material for Water Distribution. Operations Specialists who wish to attempt a Wastewater Collection Exam should attend the Wastewater Collection Course. Class begins each morning at 8:00am local time and wraps up around 4:30pm on Tuesday and Wednesday and approximately 11:30am on Thursday.

Watertown Events Center

1901 9th Avenue SW, Watertown SD 57201

30-SEPTEMBER 1 – Wastewater Collection

This course covers the Association of Boards of Certification “Need to Know” requirements for the Class I through III Wastewater Distribution Collection Exams. This course only covers the material for Wastewater Collection. Operations Specialists who wish to attempt a Water Distribution Exam should attend the Water Distribution Course. Class begins each morning at 8:00am local time and wraps up around 4:30pm on Tuesday and Wednesday and approximately 11:30am on Thursday.

Sioux Falls Water Reclamation Facility

4500 N. Sycamore, Sioux Falls SD 57101

**REGISTER FOR CLASSES ONLINE AT:
go.activecalendar.com/sdarws**

Course agendas, maps and registration are all available online at www.sdarws.com. All classes are free unless otherwise noted. For more info on these and other events, visit www.sdarws.com or call 605-556-7219.

SEPTEMBER

27-29 – Intermediate Water Treatment

This course covers the Association of Boards of Certification “Need to Know” requirements for the Class II & III Water Treatment Exams. Class begins each morning at 8:00am local time and wraps up around 4:30pm on Tuesday and Wednesday and approximately 11:30am on Thursday.

Rapid City Ramkota

2111 N. LaCrosse Street, Rapid City SD 57701

OCTOBER

12 – Stabilization Pond Workshop

This course covers the material on the Association of Boards of Certification Stabilization Pond Exams. It does not cover material on the Class I or higher Wastewater Treatment Exams. This is a single day workshop starting at 8:30am local time and wrapping up around 4:30 pm

Sioux Falls Water Reclamation Facility

4500 N. Sycamore, Sioux Falls SD 57101

25-27 – Basic Wastewater Treatment

This course covers the Association of Boards of Certification “Need to Know” requirements for the Class I & II Wastewater Treatment Exams. This course does not cover the material included in the Stabilization Pond Exam. Operators who will be attempting the Stabilization Pond exam should consider the Stabilization Pond Workshops. Class begins each morning at 8:00am local time and wraps up around 4:30pm on Tuesday and Wednesday and approximately 11:30am on Thursday.

Sioux Falls Water Reclamation Facility

4500 N. Sycamore, Sioux Falls SD 57101

NOVEMBER

NOVEMBER 15-17 – Water Distribution

This course covers the Association of Boards of Certification “Need to Know” requirements for the Class I through III Water Distribution Exams. This course only covers the material for Water Distribution Class begins each morning at 8:00am local time and wraps up around 4:30pm on Tuesday and Wednesday and approximately 11:30am on Thursday.

Spearfish Holiday Inn

305 N. 27th Street, Spearfish SD 57783



GF&P EMPHASIZES BOATING SAFETY

Boating is one of the favorite pursuits in South Dakota during the summer, and the Game, Fish and Parks Department offers up a few tips to keep the outing enjoyable.

“Even if the weather looks promising, always make a final check of the weather forecast before going out on the water,” Brandon Gust, GFP boating law administrator, said. “Take into account not only weather conditions but also time of day and boat traffic as you prepare to embark on your boating trip.”

Gust pointed out that weather can change quickly in South Dakota, and having a weather band radio or smart phone can be a life-saving addition to boating equipment. Also, operating a boat at night is very different from operating during the day time. Hazardous areas that can be difficult to navigate during the day may be far more treacherous in the dark. Gust advises folks to slow down when operating at night and to double check that your anchor and navigation lights are on and working properly if operating after sunset.

Gust said a rule of thumb for safety equipment on board boats 16 feet or longer includes:

- One U.S. Coast Guard approved and wearable personal flotation device for each person on board the boat
- One U.S. Coast Guard approved throwable flotation device (seat cushion or ring buoy)
- One U.S. Coast Guard approved fire extinguisher of B-1 type or larger

- One whistle or other sound-producing mechanical device capable of a two-second blast audible for at least one-half mile

For a complete list of what safety equipment you are required to have onboard you can pick up a copy of the South Dakota Boating Handbook at the nearest GFP Office state park, GFP-license outlet or by going online at <http://gfp.sd.gov/fishing/boating/boating/>.

“Lakes and their boat ramps can be extremely busy,” Gust said. “Plan a leisurely outing. Take time to be courteous when loading and unloading your boat, and be sure to keep a proper lookout when navigating on our waters.”

Gust said one of the best pieces of safety equipment on a boat is a personal flotation device or life jacket. “Don’t just carry a life jacket, wear it at all times. Boats do not have brakes and do not have safety belts. Many boating accidents involve someone on the boat being ejected into the water. A life jacket will keep you afloat.”

“Many of the boating accidents that occur here in South Dakota and throughout the nation are alcohol-related,” Gust said. “Drinking is not illegal, but operating a boat while being intoxicated is. Always use a designated driver and encourage everyone on board to have a fun-filled summer by being safe and responsible.”

MANAGING LAWNS TO PROTECT WATER QUALITY

By Charles B. Johnson, Extension associate – water and natural resources; James Gerwing, Extension agronomist – soils; David F. Graper, Extension horticulture specialist; and James A. Wilson, Extension pesticide applicator trainer

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Maintaining a quality lawn requires that you use intensive lawn care practices like watering, fertilizing, and/or applying pesticides. A number of best management practices provide safe-guards for preventing the contamination of surface water and groundwater supplies with lawn fertilizer and/or pesticides.

Lawn Watering Management

How and when you water your lawn affects its ability to resist the invasion of weeds, insects, and diseases, as well as the effects of drought, wind, and excessive heat. While the water requirements of a lawn vary with changing weather conditions and lawn maintenance level, the frequency and rate of watering depend on soil type and slope of lawn.

To water your lawn properly, replenish just the soil moisture used by the grass plus that lost directly to evaporation. This management practice will provide a healthy lawn and minimize water supply pollution from surface runoff or leaching. Application of the required amount of water also minimizes any effects of poor quality water (i.e. water with a high sodium or salt content).

Water Requirements

High maintenance lawns can require up to two inches of water per week during peak use period. Each time you water your lawn, you need to replace the lost soil moisture. The idea is to keep the top six inches of soil moist. Soaking, to a depth of four to six inches per watering, encourages the grass to develop deeper roots. It also allows for an adequate drying period between watering to assure proper aeration of the roots.

Watering too frequently makes grass susceptible to stresses from pathogens and other pests; it also fosters the development of shallow root systems and the buildup of thatch. Wet soil makes grass susceptible to fungal diseases of the roots, while continual moisture in the leaves increases their chances for developing fungal diseases. Generally, watering earlier in the day is a better practice than watering in the late evening.

Excessive water also increases the potential for water supply contamination from runoff or the leaching of plant nutrients and/or pesticides.

Too little water, indicated by wilted grass, makes a lawn vulnerable to weeds and undesirable grasses. Drought conditions also can stunt grass plants and make them vulnerable to disease. Lack of moisture during the fall interferes with the grass plant's ability to store enough food to survive the winter.

For best water management, you need to know the operational characteristics of your watering equipment. Calibrate lawn sprinkling to determine its application rate. For automated watering systems activated by time clocks, rainfall must be accounted for or the automation tends to cause over watering.

Sandy Soils

Sandy and sandy loam soils have low water-holding ability. Water applied to a lawn in an amount greater than the water holding capacity of the soil in the root zone, moves below the root zone carrying with it dissolved plant nutrients and pesticides. This downward percolation of excess water greatly increases the potential for groundwater contamination from dissolved plant nutrients and pesticides.

If your lawn is on sandy soil, reduce the quantity of water applied per watering, and water more often. Be sure you still supply the amount of water for a given period. For example, to supply one inch per week, you could water your lawn twice a week, one-half inch each time.

Clayey Soils

These soils have high, water-holding abilities, but their water infiltration rates are low. The water up-take rate ranges from approximately 0.05 to 0.30 inches per hour. The low infiltration rate increases the chances of surface runoff before a required quantity of water can enter the soil profile. This increases the potential for surface water pollution from nutrient- and/or pesticide-contaminated runoff.

To soak a lawn on a clayey soil, especially a sloping lawn, apply the required amount of water using short watering cycles; allow enough time between cycles for the water to soak in, or, water slowly so the required amount of water soaks into the soil before runoff can occur.

Lawn Fertilizing Management

A primary consideration in lawn maintenance is to match site

conditions with a fertilization program that will produce the desired quality of lawn. Proper fertilization management requires that fertilizer applications be based on accurate soil fertility tests. Soil sampling techniques for lawns are available through your local county extension office.

For general lawn care, make available for plant use the nitrogen contained in the grass clippings. Allowing the clippings to decompose on the lawn will give it one pound of available nitrogen per 1,000 square feet of lawn per application.

For a high-maintenance, cool season grass lawn growing in a porous, sandy soil: apply a slow-release form of nitrogen fertilizer, or, apply a smaller amount of quick-release nitrogen fertilizer, but fertilize more frequently. This best management practice will reduce the potential for nitrates to be carried into a groundwater supply by excess irrigation water or rainfall.

Phosphorous is an essential nutrient for grass, but is generally required in significantly smaller quantities than nitrogen. Quite often, lawns do not need supplemental phosphorous. Once in the soil, phosphorous quickly becomes bonded to a soil particle; this greatly reduces the potential for groundwater pollution from leaching. However, the potential for surface water pollution by phosphorous is higher because sources of phosphorous such as grass clippings, other organic matter, and soil particles can be carried into surface water supplies.

Phosphorous is often the least plentiful nutrient in surface water supplies. Consequently, when even small amounts of phosphorous enter a surface water supply, the undesirable growth of aquatic plants (algae bloom) can be accelerated.

The application of phosphorous fertilizer on a lawn or garden located near a shoreline should always be based on a current soil test.

Monitor the application closely to prevent phosphorus from entering the surface water supply. Do not spread phosphorous fertilizer on a driveway, sidewalk, patio, or other hard surfaced area where it could wash into a surface water supply.

Applying Fertilizers

There are two types of spreaders for applying granule fertilizer: a drop-type spreader which has a more precise application pattern, and a rotary-type spreader which broadcasts.

Set the spreader for one-half the recommended rate. When spreading, overlap the previous pass by one-half the swath or make the required two passes over the lawn at right angles to one another. This gives a more uniform application of fertilizer and reduces the chances of streaks appearing in a lawn.

Use a drop-type spreader on small areas to eliminate over-fertilization and on the borders of lawns to assure that fertilizer is not spread on adjoining hard surfaces or surface waters.

Fill or empty a granular fertilizer spreader on a clean, dry, hard surface. This makes it easier to clean up spilled fertilizer. NEVER wash spilled fertilizer onto a street or road or into a sewer or ditch where it can be carried to a surface water supply.

Fill or empty a liquid fertilizer applicator on a grassy area other than the lawn, or on a hard-surfaced area, to prevent spilled fertilizer from being carried to a surface water supply by runoff. To prepare fertilizer spreaders for storage, rinse them on a grassy area to prevent the contaminated rinse water from polluting surface water supplies. Do not exceed the recommended fertilization rate of an area when disposing of spilled fertilizer or rinsate.

Shut off fertilizer spreaders when in a pathway, sidewalk, driveway, or other hard-surfaced area, and avoid fertilizing drainage areas in a lawn. These practices reduce the potential for the concentration of nutrients which then can be carried to a surface water supply.

Calibrate a fertilizer spreader to assure the proper rate of application. Fertilizer applications must NEVER result in fertilizer being deposited directly into a surface water supply. For lakeside or streamside lawns, a buffer zone of natural vegetation along the shoreline area can capture eroding soil and runoff and help prevent pollution of the surface water supply.

Lawn Pesticide Management

READ and FOLLOW the label instructions exactly as written on the pesticide container. This is the most important BMP when using pesticides. The label for a pesticide provides the legal requirements for use of that pesticide.

Calibrate the application equipment to assure that the prescribed amount of a given pesticide will be applied to a given area.

Prepare only the amount of mixture required to treat a given area when a pesticide is applied in a diluted form.

Spot treat the problem area rather than the whole lawn.

Consider the population density and maturity of lawn plants, the time of day, the season of the year, the weather, and/or the physical condition of the lawn to obtain the most effective results from using a pesticide.

Apply pesticides during calm weather to minimize the potential for drift of the spray. Herbicide spray drift can harm ornamental and garden plants while insecticide and fungicide spray drift can contaminate garden crops.

Assure that no pesticide is deposited directly into a surface water supply or that any spray drift be allowed to settle on a surface water supply.

Keep the filler hose out of the pesticide-water mixture, preventing its contamination and any possibility of back siphoning.

Triple rinse empty pesticide containers and use the rinsate to help fill the applicator tank. Dispose of empty containers in accordance with label instructions and local and state regulations.

Clean and rinse spray equipment on an untreated grassy area, away from wells and surface water supplies, spraying or spreading the rinse water on the untreated area.

GEOLOGY & SOUTH DAKOTA WATER RESOURCES

Part One

By: Martin Jarrett, Big Sioux Community Water System, and Jay Gilbertson, East Dakota Water Development District

South Dakota has a diverse geologic history. Hard, crystalline rocks like granite and quartzite are found in the central core of the Black Hills and in quarries near Milbank, Mitchell and Sioux Falls. These and similar rocks underlie all of the state and form the foundation on which all other materials rest. Layers of sandstone, shale and limestone, which can be seen ringing the Black Hills and extending east to the Missouri River valley (and beyond), record periods when the state was covered by great oceans that swept over the landscape. Lastly, covering most of the state east of the river are deposits left behind when glaciers repeatedly advanced across what is now the northern United States. While each geologic unit is different, they all share a common trait - they each have a direct connection to the drinking water resources that we utilize today.

South Dakota is blessed with an abundance of groundwater, and there are very few areas where one cannot drill without actually finding water. However, in some places you might need to drill a very, very deep well. Further, although there may be water available, the quality of the water that is encountered may not be acceptable. (Sometimes the only positive thing that can be said about the water is that it is "wet!") The location, quantity and quality of South Dakota's groundwater resources all are impacted by geology. This is the first of a series of articles in which these connections will be explained and explored.

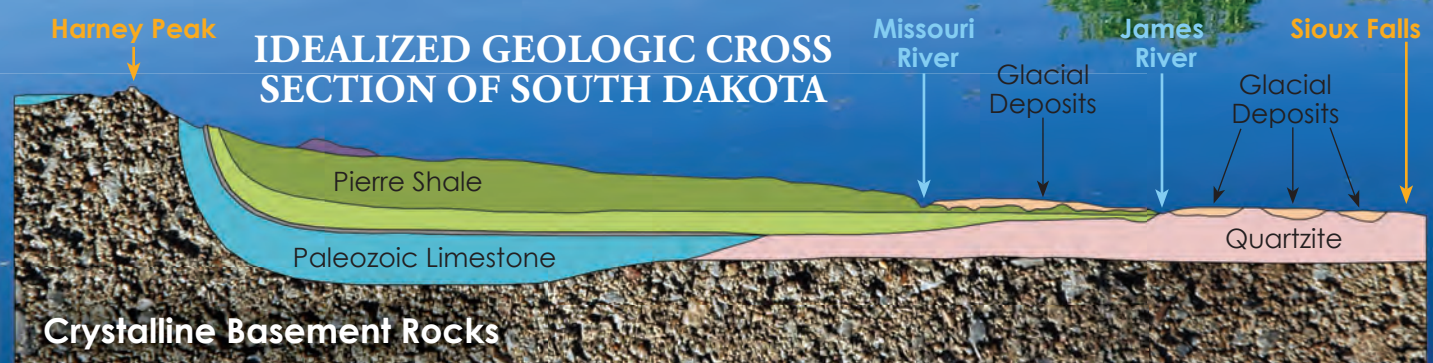
Crystalline rock aquifers

An aquifer is a geologic unit that is capable of producing water in sufficient quantities for practical use. In most cases, the "best" aquifers are those that have both a high porosity (open spaces that can actually hold water) and

high permeability (the ability of water to move between these spaces). Unfortunately, the crystalline rocks that form the geologic foundation of the state are neither porous nor permeable, being composed quite literally of solid rock. As a result, these units are generally considered to be poor candidates for aquifers. As you can imagine, solid rock has no capacity to hold any water at all.

And yet, even in places where these crystalline rocks are the only option, productive wells can be found. South Dakota's crystalline rocks are very old, and as a result have been exposed to a wide range of geologic forces. Over hundreds of millions to billions of years, these forces have deformed and broken portions of the otherwise solid rock. The cracks and fractures in the rock can create interconnected open spaces (porosity and permeability) necessary for them to hold and yield significant amounts of water. Unfortunately, these fractures are not uniformly spread through the rock. Rather they tend to occur in zones, with largely unaffected solid rock in between. Finding the best place to drill a well often requires a good understanding of the local geology and fracture patterns, and a fair amount of luck.

Crystalline rock aquifers are a significant source for many public water supplies and private homes and businesses in the central Black Hills, where no other options exist. The towns of Custer and Hill City draw from fractured bedrock wells. Outside of the Black Hills, and a small area east of Milbank, these types of rocks are largely buried beneath hundreds to thousands of feet of younger rocks and aquifers. Beyond mineral exploration, there are very few reasons to drill down to the crystalline "basement" in these areas.



GEOLOGICAL MAP OF SOUTH DAKOTA

However, in a portion of south-eastern South Dakota, in and around the area between Mitchell and Sioux Falls, crystalline rock can be found at or very near to land surface. In this region, the Sioux quartzite (the ubiquitous “pink rock”) is exposed, or may be covered by only a few tens of feet of younger material. However, as in the Black Hills, highly productive wells can be installed where fracture zones exist. The City of Salem currently draws its water from a quartzite well, and many communities in the area have used it in the past.

As an aside, the ability of these fracture zones to transmit water can create problems for those trying to mine these rocks. The natural breaks in the rocks can be exploited in the quarrying process, requiring less effort to break apart

the stone. However, if the quarry depth extends below the local water table, these fracture zones provide a ready conduit for water into the quarry. Substantial pumping is at times required to prevent the quarry from filling with water. When use of such quarries is discontinued, they quickly fill with water.

The Robert Hunter Granite Quarry located five miles east of Milbank (pictured on the cover), opened in 1908. When operations ceased in the late 1960s, and the pumps were turned off for the last time, groundwater filled the quarry and created one of the deepest “lakes” in South Dakota. South Dakota Game, Fish and Parks now owns the property and stocks trout in its cool, dark waters.

Next time: Water in the “layer cake” rocks.



Fractures in the Sioux Quartzite at Sioux Falls.



City of Custer well in fractured granite.



Abandoned granite quarry filled with groundwater.

DAVISON RURAL WATER

Davison began its story back in May of 1983 with a meeting at the Davison County 4-H Building. There were approximately 70 people in attendance who all agreed that there was a need for a rural water system. A committee of eight individuals was selected to head up a steering committee. An office space was donated by Bernie and Iris Oster at American Global Co. in June. By August, the first By-Laws were approved and adopted, followed by state approval of the Articles of Incorporation in September. After the System was official, rules and regulations were adopted, and the first Annual Membership meeting was held in October of 1984.

Construction began in 1985 after five acres of land was purchased for an office building, pumphouse, and reservoir. In November of the same year, a water contract was signed with the City of Mitchell. Soon after, the water was turned on for a portion of the System in January of 1986.

A more permanent office/shop space was built and completed in December of 1987. That following January, Davison joined forces with Hanson Rural Water to share management.

1992 saw the completion of two projects, the first being a new warehouse; the second being the completion of the first expansion project which added a tower northeast of Mitchell and brought on an additional 61 users.

In 1996, the board pursued changing their water source, and looked into purchasing their water from the Randall Community Water District – a contract for this agreement was signed in December of 2002 – six years later.

The second expansion project was completed in October 1998 with a tower built south of Mitchell, and an additional 147 users added to the system.

Twenty-nine more users were added to the system when Missouri River Water was turned on December 2002.

September 2003 saw the completion of Davison's third expansion project. This project hooked up the town of Mount Vernon, and added an additional 67 users in the Mount Vernon and Plankinton rural areas. Water was also shut off from the City of Mitchell and Randall Community Water filled Davison's pipes.

Since 2005, a second shop/warehouse was constructed, as well as an office remodeling project. Davison currently services 1,220 hookups through 610 miles of pipe, and covers the counties of Aurora, Davison, Douglas, and Sanborn in southeast South Dakota.



Awards:

1986: System Director of the Year – Bernie Oster

1998: Rural Water Manager of the Year – Francis "Buzz" Mason

2004: Rural Water System of the Year

2006: Office Manager of the Year – Cheryl Schuman

2016: Spirit of Rural Water – Bruce Alexander



DIRECTORS:

.....
Carol Millan, Chairman

Bob Weisz, Vice Chairman/SA
Director

Dennis Kiner, Secretary/Treasurer

Bob Young, Director

Norman Neugebauer, Director

Brian Bode, Director

STAFF:

.....
Dan Schroeder, Manager

Doug Oster, Service Technician

Terry Haag, Service Technician

Cheryl Schuman, Office/Bookkeeper

Kevin Porth, Operator

Jake Jones, Operator

STATISTICS:

.....
Hookups: 1,220

Miles of Pipeline: 610

Water Source: Randall
Community Water District

Counties Served: Aurora,
Davison, Douglas, Sanborn

Towns Served Individual: Loomis

Towns Served Bulk: Mount
Vernon and Letcher

RURAL WATER & Crossword & Word Scramble Contest

Camping

\$100 Grand Prize

SCRAMBLE ANSWER

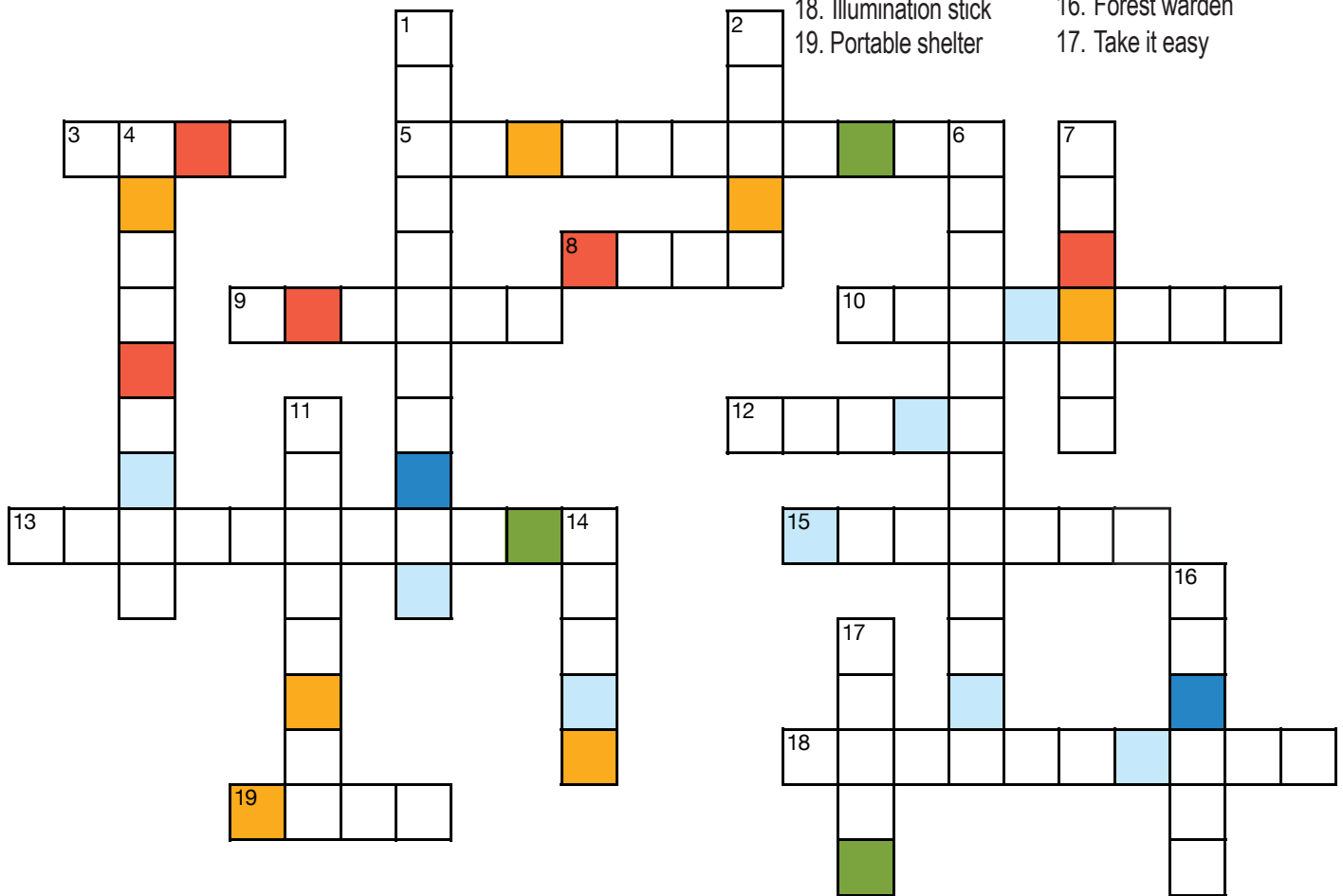


ACROSS

3. Fishing spot
5. Siesta sack (2 words)
8. Nature walk
9. Lawn lunch
10. Summertime pest
12. Nature's nightlights
13. Smore glue
15. Ringtailed varmint
18. Illumination stick
19. Portable shelter

DOWN

1. Fish stick (2 words)
2. Kayak's cousin
4. Exciting expedition
6. Spooky narrative (2 words)
7. One may commune with it
11. Marshmallow toaster
14. Forest
16. Forest warden
17. Take it easy



RULES

Use the colored squares in the puzzle to solve the word scramble above. Call your Rural Water System (See Page 2 for contact information) or enter online at www.sdarws.com/crossword.html with the correct phrase by July 10th, 2016 to be entered into the \$100 drawing.

Online Entries - go to: www.sdarws.com/crossword.html

Only one entry allowed per address/household. You must be a member of a participating rural water system to be eligible for the prize. Your information will only be used to notify the winner, and will not be shared or sold.

Congratulations to Connie Wall who had the correct phrase of "It's pronounced "pier" here" for April 2016.

Rural Water Across South Dakota

Governor Dennis Daugaard: Memories of the 2011 Flood



It is hard to believe that it has been almost five years since the Missouri River flood

I first received word of the escalating water releases from the Oahe Dam on a Tuesday as I was on my way back from Chicago. We had been visiting with Bel Brands about doing business in South Dakota, and in a matter of moments our focus shifted from business recruitment to how we would manage the rising waters.

At the time I had no idea that flood response would be our primary focus for the next several weeks. The Army Corps of Engineers told us the releases would be at record-high levels and it was uncertain how long they would continue.

My kids had planned to come to Pierre that Memorial Day weekend to relax. After hearing the news I called them to cancel our plans. They came to Pierre anyway and spent the weekend filling sandbags with my wife Linda

The following days were a flurry of activity.

In short order we opened up the Emergency Operations Center (EOC), blocked one lane of Interstate 29 for use as a haul road, and asked the citizens in some areas of Dakota Dunes and Fort Pierre to evacuate.

We watched as Blackhawk and Chinook helicopters placed one-ton helibags of sand in and around places like McCook Lake, Wynstone and Yankton.

I recall flying over Lake Oahe and seeing the big whirlpool that formed where the water was draining through the dam.

I spent hours in the EOC, assisting in the Pierre/Fort Pierre area response, while Lt. Gov. Matt Michels coordinated efforts in the southeast.

We walked the levees, to ensure the berms of earth and rock were solid; we rode in dump trucks to monitor traffic so it flowed as efficiently as possible; and we helped our neighbors carry their possessions to higher ground.

I remember the frustration we felt as the water-flow peak estimates changed from 85,000 cubic feet per second, to 110,000 cfs and ultimately to 160,000 cfs. The previous peak release from

the 50-year-old Oahe Dam was 59,000 cfs. Things looked grim but there was no time for doubt.

There was a noticeable feeling of relief when the National Guard arrived. They worked for 96 consecutive days on 12- to 15-hour shifts. It was the largest in-state deployment since the 1972 Rapid City Flood. Prison inmates also pitched in. At one point, the National Guard members and the inmates started a competition to see which group could fill the most sandbags

I can still see the faces of the state and local emergency response officials – mayors, county commissioners, and the individuals from the Red Cross and Salvation Army who worked so tirelessly. I remain grateful for the long hours they labored.

I will never forget the crews who worked so hard to construct the levees. In just a few days, they did a job that would normally take months or years. They constructed earthen berms that held back the Mighty Missouri for several miles. As crews were building the levees, there were times they could see the water rising and did not know if they could finish in time; but they kept on going

Most of all, I remember the volunteers. People from all over the state came to help. They came by the busload. They filled thousands and thousands of sandbags to protect homes, businesses and loved ones. They brought food, drink, comfort, encouragement and hope to the crews.

At one point, I met a retired woman living in Pierre who didn't know if she'd get her house sandbagged in time. She lived on her own and was struggling. Before the water arrived a group of young volunteers showed up just in time and got the job done. There are many similar examples up and down the river.

South Dakota had had disasters before – tornadoes, blizzards, fires and floods. We always have joined together to help our neighbors recover and move forward. But this flood was different. We had never been given so much advance warning. Thousands of South Dakotans joined together to avoid a disaster.

Many homes were damaged, and some were destroyed. Still, we did all we could, and thanks to our efforts, a great deal of property damage and human suffering was avoided. As high as the floodwaters rose, South Dakota rose higher. I am just as proud today as I was five years ago.



WATERPRO ONLINE COMMUNITY LAUNCHES NEW INTERFACE

Dennis N. Davis, Executive Director
South Dakota Association of Rural Water Systems

The WaterPro Community recently launched a new, updated interface, bringing a new look and new functionality to the online community of water professionals.

The WaterPro Online Community, originally launched in January of 2015, is designed for water and wastewater professionals to provide an exclusive opportunity to network, ask questions and share experiences about the water industry – the industry we all depend on.

Since that time, over 1,300 individuals have added 884 posts, made 3,765 comments and replies, read 230 blogs as well as provided important answers to a multitude of questions.

The new WaterPro Community features a phone and tablet

friendly design. All community pages will now adapt to the user's device, changing size and layout to ensure it fits the screen. This allows users to experience all the buzz of the community, no matter how they choose to connect.

New users can register to receive a 30-day free trial to the community. WaterPro Community memberships include membership to the National Rural Water Association and renew for \$49 per year. South Dakota Rural Water also gives discounts to our Annual Technical Conference and Leadership Seminar for WaterPro members.

To learn more about WaterPro membership and how it can benefit you, visit: www.waterprocommunity.org.

Come on in! Check out ALL the benefits and information available only to members!

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WATER MATTERS

Observation Wells



Driving around rural South Dakota, it is not uncommon to see a piece of plastic pipe sticking out of the ground in the road ditch. Most (hopefully) will be flanked by a couple of steel fence posts and some will have a cap secured with a padlock. Sometimes the pipe is encased in a steel housing. These are ground water observation wells, and they are used to monitor the nature and condition of the aquifers on which we all depend.



Most observation wells are used to measure the water level over a period of time. During times of drought or high demand, water levels will drop. When use declines, or when precipitation replenishes the aquifer, water levels rise. The overall goal is to ensure that water use does not exceed the aquifers capacity. The Water Rights Program within the South Dakota Department of Environment and Natural Resources (DENR) maintains a network of over 1,550 observation wells across the state for this purpose.

By comparing the water levels across an aquifer, it is possible to determine the direction of water movement. If a public water supplier knows where its water comes from, it can develop protection strategies and programs.

Observation wells can also be used to monitor the quality of the water in an aquifer. Such wells might assess conditions in the area around a known contamination event, or simply monitor

long-term conditions and trends. The Statewide Ground Water Quality Monitoring Network, maintained by the DENR Geological Survey Program, monitors 25 critical shallow aquifers across the state.

If you see a well that is in poor condition, or if you just have questions about what the well might be used for, you can contact the following entities:

- DENR Geological Survey Program, (605) 677-5227**
- DENR Water Rights Program, (605) 773-3352**
- East Dakota Water Development District, (605) 688-6741**



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