

March/April 2015

ServiceLine

— The Official Publication of the South Dakota Association of Rural Water Systems —



WEST RIVER EXPO

APRIL 29-30, 2015
RAPID CITY, SD

TRACKING WATER LOSS | RALLY HIGHLIGHTS | SMALL SYSTEM WORKSHOPS

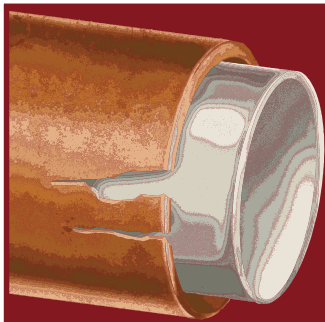


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President's Message



Dan Carlson
SDARWS President

Water Technology EXPO

South Dakota Rural Water is pleased to host the 2015 Water Technology EXPO. The EXPO will be held in Rapid City at the Best Western Ramkota Hotel and Conference Center (605-343-8550) on April 29-30, 2015.

The EXPO is open to all water and wastewater utility staff, board/council members, engineers, State and Federal employees. The training will consist of twenty presentations, 30 minutes each, thus allocating ten contact hours for those individuals who are licensed operations specialists. Along with the training sessions, the EXPO will showcase many of our industry's manufacturer and supplier leaders. These professional companies will be set up in the main EXPO training center for attendee easy access and to provide answers to those pressing questions. Many will be displaying the recent advances in technology our industry has witnessed over the past several years.

The EXPO will kick off at 8:00 am Wednesday April 29th and conclude at noon on Thursday, April 30 with lunch provided on the first day. Registration is \$40, and SDARWS is able to bill for this fee after the conference. Please pre-register by visiting our website at www.sdarws.com. The full agenda can be seen on page 9.

Copper in Drinking Water Survey

NRWA & AWWA are collecting information for a Copper In Drinking Water Survey which will be open until April. The data from the survey will assist in pressing for relief on the EPA committee negotiating revisions to the Lead and Copper Rule. The current proposal before the committee would separate copper from the rule and make compliance with the copper standard a function of water chemistry versus in-home testing. The survey takes about 10-15 minutes to complete (<http://tinyurl.com/ku43wk9>).

Fleet Program

The National Rural Water Association has created partnerships with the Ford Motor Company and the Chrysler Group to offer special fleet discounts to State Rural Water Associations and their utility system members. This partnership combines the buying power of 31,000 individual utilities to provide reduced fleet pricing on utility vehicles.

The Rural Water Ford Fleet Program is a valuable member benefit for water and wastewater utilities. State Rural Water Associations determine eligibility for their members, and provide a fleet code that allows access to substantial vehicle discounts to fill the need for reliable work vehicles.

Member utilities should contact their State Rural Water Association to access the Rural Water Fleet Program. Vehicles may be purchased at your local dealer or through the national fleet auto group at www.nrwafleet.com. Incentive discount pricing is available on fuel efficient cars, vans, SUVs and trucks. Systems can save up to \$6,750 off factory invoice per vehicle.

- Entities must be current members of South Dakota Rural Water to be eligible
- There is no limit to the number of vehicles that can be purchased under the program
- Incentive pricing is deducted off the factory invoice
- Fleet vehicles must be in service for a minimum of 12 months or 20,000 miles
- Vehicles must be registered and operated in the United States
- Call SDARWS (605-556-7219) today to get your Fleet Identification Number (FIN)

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Events Calendar

MARCH 2015

- 19 Stabilization Pond Workshop**
Highland Conference Center
2000 Highland Way
Mitchell, SD – 605-990-1575
- 24-25 Mapping & GIS with TerraSync**
SDARWS Madison Office
203 W. Center Street
Madison, SD 57042 – 605-556-7219
\$550 Registration Fee
- 24-26 Wastewater Collection/Water Distribution**
Crossroads Hotel
100 4th Street SW
Huron, SD – 605-352-3204

APRIL 2015

- 7-9 Intermediate Water Treatment**
Holiday Inn - Spearfish
305 N. 27th Street
Spearfish, SD – 605-642-0203
- 14 Water Distribution Workshop**
Rapid Valley Sanitary District
4611 Teak Drive
Rapid City, SD – 605-393-1050
- 15 Water Distribution Workshop**
Winner Fire Hall
100 E. Tripp Avenue
Winner, SD – 605-842-0359
- 16 Water Distribution Workshop**
Colman Community Center
120 N Main Avenue
Colman, SD – 605-534-3611
- 29-30 Water Technology EXPO**
Rapid City Ramkota
2111 N. Lacrosse Street
Rapid City, SD – 605-343-8550
\$40 Registration Fee

MAY 2015

- 5 Intermediate Water Distribution**
Rapid City Ramkota
2111 N. Lacrosse Street
Rapid City, SD – 605-343-8550
- 5 Small Water System Workshop**
Rapid Valley Sanitary District
4611 Teak Drive
Rapid City, SD – 605-393-1050
- 6 Small Water System Workshop**
Custer Fire Hall
616 Crook Street
Custer, SD – 605-673-4080
- 7 Small Water System Workshop**
Lodge at Deadwood
100 Pine Crest Lane
Deadwood, SD – 605-584-4800
- 12-14 Advanced Water Treatment**
Sioux Falls Water Purification
2100 N. Minnesota Avenue
Sioux Falls, SD – 605-367-7025

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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.

SD Legislature Approves \$7.7M For Lewis & Clark

Funding will be used to “wheel” water to Madison

The South Dakota House of Representatives and the South Dakota Senate have approved Governor Dugaard’s Omnibus Water Bill (S.B. 173), and so it is now onto his desk for signature.

The bill includes \$7.7 million for the Lewis & Clark Regional Water System (L&C), which will be used to construct the southernmost and northernmost segments of the Madison service line, which are each five miles long. There is a 32 mile gap between these two segments. To allow up to one million gallons of water a day to be “wheeled” to Madison, the bill also authorizes a combined \$4.8 million for Minnehaha Community Water Corp (MCWC) and Big Sioux Community Water System to connect their infrastructure. L&C will sell water to MCWC using the southernmost segment of pipeline, who in turn will sell water to Big Sioux, who in turn will sell water to Madison using the northernmost segment of pipeline. “A great deal of cooperation and creativity went into developing this wheeling plan,” said Executive Director Troy Larson.

The \$7.7 million for L&C, as well as the \$1 million the state approved last year for engineering and easement acquisition on those two segments of pipeline, are “federal funding advances.” The zero interest awards will be paid back with future federal funding once all 20 members are connected, but before the project is complete. An estimated \$33 million of work will

remain once all the members are connected. This work will not be completed until South Dakota and Minnesota have been repaid. Last year Minnesota approved a \$22 million advance and is considering another advance this year. Iowa is also considering an advance this session.

“This is a huge step forward for our four systems and we cannot thank state leaders enough! Their willingness to stand in the gap to help keep construction moving forward is tremendously appreciated. Special thanks to Governor Dugaard, the State Legislature, the South Dakota Board of Water & Natural Resources, and the South Dakota Department of Environment & Natural Resources for their strong support and leadership,” said Larson.

Background Information:

The annual Omnibus Water Bill has a dedicated source of funding for water projects. The West River/Lyman-Jones Rural Water System prepaid a \$12.5 million loan this past July, which could only be re-invested in other water projects. The one-time money ensured the wheeling plan did not adversely impact any other water projects vying for assistance in the Omnibus Water Bill.

L&C’s long-term plan is to eventually construct the middle 32 miles of pipe on the Madison service line, but will wait for available federal funding to do so. When that happens, the interconnection between MCWC and Big Sioux will still be used. Big Sioux was planning to build additional water treatment capacity, which would have required State assistance. Having access to more water through MCWC and L&C will allow Big Sioux to significantly delay and hopefully eliminate the need for additional treatment capacity, thereby saving the state money. This “regional approach” to addressing water needs has been encouraged by state officials. ♦



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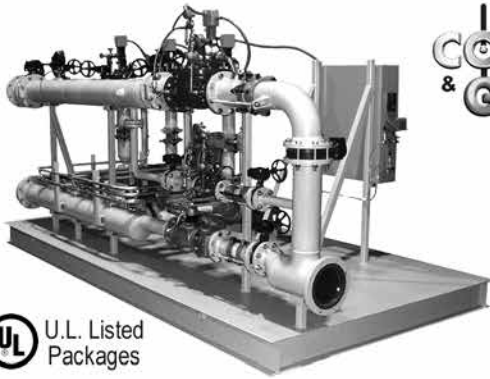
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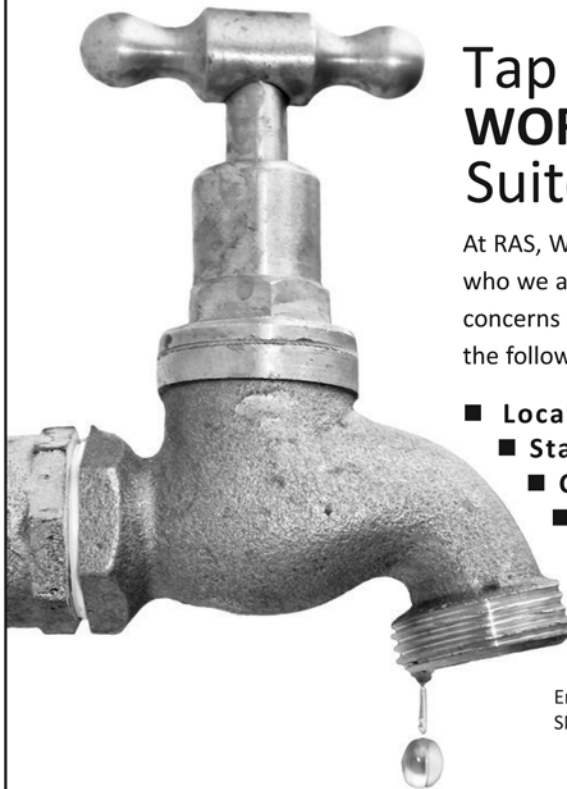
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April 29-30, 2015
BEST WESTERN RAMKOTA HOTEL - RAPID CITY

Wednesday, April 29, 2014

- 7:30am **Registration – Refreshments – Visit Displays**
- 8:15am **Welcome, Agenda Review**
- 8:30am **Automatic Leak Detection and Pressure Testing**
– Jim Urban, Milbank Winwater
- 9:00am **Asset Maintenance Plan for your Wells**
– Ron Rappard, Utility Service Group
- 9:30am **Get Started Mapping** – Nate Bruss, CompassTool
- 10:00am **Refreshment Break – Visit Displays**
- 10:30am **Cleaning Mechanism for Improved Water Quality** – Joe Schmidt, Hawkins Water Treatment Group
- 11:00am **Storage Tanks** – Richard Russ, USA Tank
- 11:30am **Re-Energizing Capacity Development**
– Erin Dreis, DENR
- 12:00pm **Deli Bar Buffet Lunch**
- 1:00pm **Radiation** – Dean Aurand, Midcontinent Labs
- 1:30pm **Treatment Solutions for your system**
– Greg Backstrum, Treatment Resources
- 2:00pm **Control Valves** – Andy Caselli, Cla-Val
- 2:45pm **Refreshment Break – Visit Displays**
- 3:15pm **What is new in the water industry?**
– Tim Monson, HD Supply

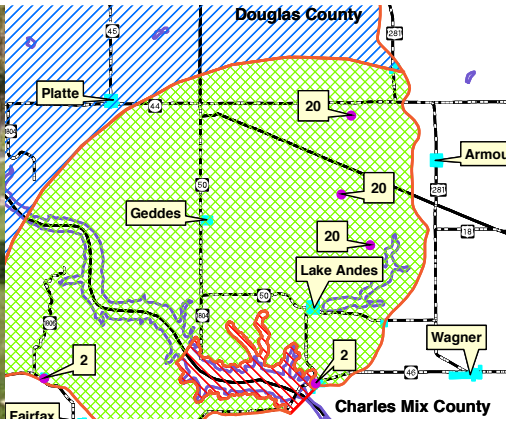
- 3:45pm **The importance of pre inspection and cleaning prior to sewer projects** – Michelle Barrett, Hydro-Klean
- 4:15pm **Bio - Augmentation, Wastewater Treatment, Aquatic weed control** – Gary Syverson, Team Laboratories
- 5:00pm **Door Prizes – Adjourn**

Thursday, April 30, 2014

- 7:30am **Coffee, Juice, & Rolls**
- 8:00am **Tank Inspections**
– Robert Greenspan, Midco Diving
- 8:30am **Ground Water Sustainability**
– Mitch Kannenberg, LBG
- 9:00am **Macro and Alpha Products and Applications**
– John Nelson, Romac
- 9:45am **Refreshment Break – Visit Displays**
- 10:00am **The use of equipment procurement in project design** – Brian Hoellein, Bartlett & West
- 10:30am **Tracer Wire Products and Applications**
– Mike Moore, Copperhead Industries
- 11:00am **Water Storage and Altitude Valve Control: A Spearfish, SD Case Study** – Ted Schultz, AE2S
- 11:45am **Door Prize – Adjourn**

This is a tentative agenda. Topics and times are subject to change.

Source Water Workshop Held



By Jeremiah Corbin, SDARWS Source Water Protection Specialist

The Rural Water Source Water Protection Workshop was held at Cedar Shores, Oacoma on February 4. This annual event is held to provide workshop attendees with information on resources available through the Rural Water Association, set priorities for the next program year, and provide a venue for FSA, EPA and state agencies to bring priority areas to the forefront.

Along with providing a forum to share ideas and priorities for source water protection efforts, workshop attendees were provided an overview of source water protection specialist's previous year's achievements. South Dakota Rural Water provides assistance to community water systems in their efforts to develop source water protection plans. At a minimum, South Dakota Rural Water will develop three new plans annually while forging new relationships for future projects and spend time with systems that have previously developed plans. The three plans developed for the 2014-2015 year are: Randall Community Water District, Lewis & Clark Regional Water System and Custer County.

A source water protection plan consist of seven basic components:

- A map outlining the source water protection area
- Source water inventories
- Potential contaminant source inventories
- Definition of each entity's area of responsibility/authority in relation to potential sources from contamination
- Preventative measures that may be initiated by each entity
- A contingency plan that will consist of a strategy for supplying safe water to the consumer in the event of contamination or disruption of service.
- A Steering Committee to review and update the plan and follow through on preventative measure commitments from each entity

Beyond developing source water protection plans, SDARWS staff are constantly striving to identify additional source water measures that systems can utilize based on unique circumstances. A few of these efforts include:

- **Biological control of leafy spurge utilizing flea beetles.** SDARWS staff have been coordinating with South Dakota Department of Agriculture to participate in collection days with a goal of establishing flea beetle colonies on a few rural water system's well fields where leafy spurge is a problem.
- **Work with Rural Electric Co-ops on strategies to minimize risks with chemigation irrigators.** Most center pivot irrigators are enrolled in electric load management programs. Chemigators could potentially have issues when their irrigator is shut down during load management times with the unit filled with chemical. Irrigators and systems concerned about this are encouraged to contact their local Rural Electric Co-op to identify strategies to shut the chemical feed pump off before the load management event occurs, this will allow the chemical to be dispersed onto the field before the well is shut off.
- **Statewide VRS network.** The ability to utilize high accuracy GPS in South Dakota is limited by the lack of publicly available basestations. SDARWS is advocating for a statewide basestation network (VRS) that will be available to utilities, surveyors, engineers and the Ag Community for High Precision Agriculture.
- **Continue to work with systems by being involved in outreach efforts,** including: Sioux Empire Water Festival, Big Sioux Water Festival, Watertown Farm Show, and the Discover Madison Day's water carnival.

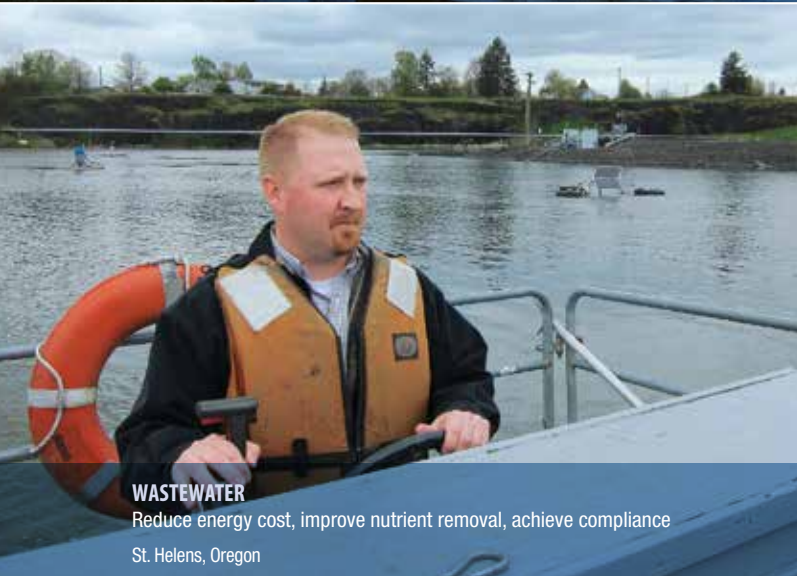
The Source Water Workshop provided an opportunity for the fifteen attendees to shape the direction of South Dakota's Source Water Protection efforts. If you were unable to attend this year's workshop but are interested in developing a source water protection plan, contact South Dakota Rural Water. 💧



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WATERTOWN FARM SHOW

By Jeremiah Corbin, SDARWS Source Water Protection Specialist

The 70th Annual Watertown Farm Show was held February 10 – 14. For the last several years South Dakota Rural Water has provided outreach and educational material at a booth, promoting source water protection and general information for all things rural water. This year's farm show booth provided the traditional materials as well as additional handouts provided by Sioux Rural Water.

Sioux Rural Water provided gifts to visitors to the booth that were left over from their annual meeting. Many people went home with a new Sioux Rural Water rain gage, several children left the booth smiling with a new Frisbee and a handful of individuals left with a pen, and of course, candy.

The farm show attendees came to the rural water booth with many good questions. Questions ranged from concerns about private well safety, a handful of individuals asked about joining water systems, concerns about septic systems, and agricultural nutrient management.

The Watertown farm show has provided an opportune venue to meet with the agricultural community. Since the show is held during a slow time for most producers, it is typically well attended and lends itself to be a comfortable place for an exchange of ideas.

If your system is interested in promoting source water protection at an event, contact South Dakota Rural Water for more details. ♠



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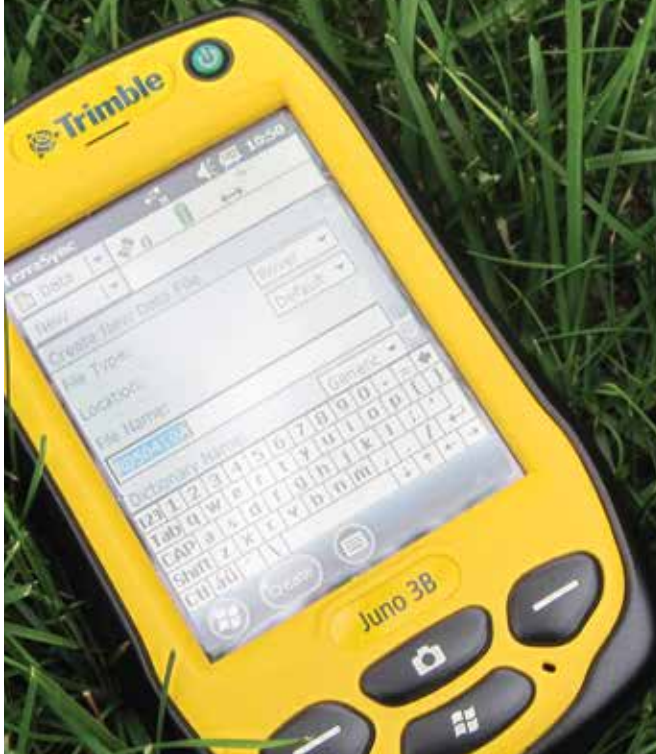


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SDARWS Hosting Trimble Mapping & GIS Class with CompassTools

CompassTools and South Dakota Rural Water are providing Trimble GPS Unit with TerraSync software training. The two-day course will cover the five steps of a project; from mission planning to collecting, processing and exporting data; and training on the following topics:

- GPS Fundamentals
- Mission Planning
- Data dictionary creation
- Configuring GPS equipment
- Data Collection techniques
- Downloading Data
- Differential correction using GPS Pathfinder Office

- Data editing in GPS Pathfinder Office
- Exporting Data to your GIS and Field Sessions

The class is designed for attendees to utilize their own equipment for hands-on training with professionals.

We are offering two sessions for this class; the first takes place March 24-25 at the SDARWS office in Madison while the second class is scheduled for April 14-15 at the Mid-Dakota Water Treatment Plant in Pierre. Cost to attend the training is \$550.

For more information, please contact Jeremiah Corbin at jcorbin@sdarws.com or at 605-556-7219. For a more detailed agenda, or the training calendar, please visit www.sdarws.com.

Day One

- 8:30am** **Introduction to the mapping products**
Global Positioning System: GPS
Fundamentals, Accuracy
- 10:00am** **Break**
- 10:15am** **Overview of the five steps of a project** (1-Field Reconnaissance, 2-Mission Planning, 3-Equipment Setup, 4-Data Collection, 5-Data Processing)
- 12:00pm** **Lunch**
- 1:00pm** **Mission Planning** - Planning your project (Open and view a Quick Plan session)
Equipment Setup: Configuring the GPS equipment
- 2:00pm** **Break**
- 2:15pm** **Data Collection:** Field Session - GPS Status; Status Bar; Creating a new file; Collecting Point, Line and Area features
- 4:15pm** **Review**

Day Two

- 8:30am** **Data Collection:** Field Session - Advanced data collection techniques (Continuing, Segmenting, Offsets, Nesting)
- 10:15am** **Break**
- 12:00pm** **Lunch**
- 1:00pm** **Data Processing:** GPS Pathfinder Office Software (Transferring files, Configure GPS Pathfinder Software, Differential correction)
- 3:00pm** **Break**
- 3:15pm** **Data Processing:** GPS Pathfinder Office Software (Viewing data files, Data editing, Exporting your data to your GIS or CAD)
- 4:15pm** **Review/Course Evaluations**

Contact Jeremiah Corbin at 605-556-7219 or email jcorbin@sdarws.com for more info.





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Small Water System WORKSHOPS

By *Steve Attema, SDARWS Training Specialist*

SDARWS will be holding three small water system workshops on May 5th through the 7th in the Black Hills area. The workshops will cover many of the maintenance and operational needs of small water systems as well as a discussion on the seasonal system start up procedures that will be required when the revised total coliform rule goes into effect in April of 2016.

One of the workshops will be held on the night of May 5th from 5:30 PM to 7:30 PM in Rapid City and will cover the following topics:

- seasonal system start-up procedures and the DENR Checklist
- disinfection/chlorination
- chemical feed systems
- shock chlorination
- system flushing

The full workshops on May 6th in Custer and May 7th in Deadwood will be held from 8:30 AM to 4:30 PM and cover the following topics:

- seasonal system start-up procedures and the DENR Checklist
- disinfection/chlorination
- chemical feed systems
- sampling
- shock chlorination
- system flushing
- leak detection
- source water protection
- well maintenance

Approximately 7 contact hours will be given for the full workshops and 3.5 contact hours will be given for the night workshop in Rapid city. Beverages and snack items will be provided but lunch and/or supper will be on your own. ♠

RAPID CITY

May 5, 2015

- 5:30 PM System start-up procedures and the DENR checklist
- 6:30 PM Disinfection Basics – Hawkins Water Treatment Group
- 7:15 PM Break
- 7:45 PM Chemical Feed Systems – Hawkins Water Treatment Group
- 8:45 PM Shock Chlorination and System Flushing

CUSTER

May 6, 2015

- 8:30 AM System start-up procedures and the DENR checklist
- 9:30 AM Disinfection Basics – Hawkins Water Treatment
- 10:15 AM Break
- 10:30 AM Chemical Feed Systems
- 11:30 AM Shock Chlorination and System Flushing
- 12:15 PM Lunch (On your Own)
- 1:15 PM Leak Detection
- 2:00 PM Source Water Protection
- 2:45 PM Break
- 3:00 PM Well Maintenance
- 3:45 PM Sampling and Testing

DEADWOOD

May 7, 2015

- 8:30 AM System start-up procedures and the DENR checklist
- 9:30 AM Disinfection Basics – Hawkins Water Treatment
- 10:15 AM Break
- 10:30 AM Chemical Feed Systems
- 11:30 AM Shock Chlorination and System Flushing
- 12:15 PM Lunch (On your Own)
- 1:15 PM Leak Detection
- 2:00 PM Source Water Protection
- 2:45 PM Break
- 3:00 PM Well Maintenance
- 3:45 PM Sampling and Testing





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IN APPRECIATION

South Dakota Rural Water & Dan Carlson


I can't thank you enough for one of the nicest things which ever happened to me in the South Dakota Legislature. The "Friend of Rural Water" Award was totally unexpected – and to share this with my good friend Corey Brown, most memorable.

Sincerely Thank You,

Charles B. Hoffman
Former Member, SD House of Representatives
Eureka, South Dakota

PLEASE SEND LETTERS!

SDARWS asks for your letters of appreciation in return for our on-site assistance. These letters are used to help obtain funding to continue these programs. Please submit letters to: info@sdarws.com; or SDARWS • PO Box 287 • Madison, SD 57042



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Tracking Your Water Loss

By Morris Elcock, SDARWS Circuit Rider

There have been so many times where I have received a call from a water utility saying, “we need your help with our water loss – it is 40% - 60%,” and it’s been that way forever. When I get a call like this, I set a time to stop by and conduct a water audit. What I oftentimes find is that even though the system has some water loss (and yes, every system has some kind of water loss), many systems do not take into account the water that was flushed out of their fire hydrants during a routine flushing of their system, or they do not keep track of how much they have written off of a customer’s account when they adjust some water off because of dirty water, etc. It also seems like everybody is concerned with what their percentage of unaccounted water is – and yes, that is an important number, but I always like to take things a little further and take that

percentage and calculate it to find out how many gallons per minute that percentage translates into. Additionally, we find out what kind of water loss we are looking for so that we can figure how much that unaccounted for water is costing the utility. What I have done to help water utilities track their unaccounted for water is develop a spreadsheet so that they can not only track what percentage of their unaccounted for water is, but also see how many gallons per minute we are tracking and calculate how much this water loss is costing the utility. There is also another added benefit to using the spreadsheet, and that is – it makes for a good report to use and share with your council or board to keep them informed on how much water is unaccounted for. Take a look at the spreadsheet below, and if you are interested in setting up a water audit for your water utility, please give me a call at 605-556-7219 and ask for Morris, or call me directly on my cell phone at 605-201-9561. ♦

Unaccounted For Water Spreadsheet (Example)

Column1	2015	2015	2015	2014
Month	January	February	March	April
Water Metered	982,980	907,600	933,300	1,338,390
Adjustments/flushing/leaks/etc.	0	0	85,000	0
Sub Total	982,980	907,600	1,018,300	1,338,390
Water Purchased / Produced	1,161,970	996,800	1,129,800	1,416,200
Unaccounted for Water	178,990	89,200	111,500	77,810
% of Unaccounted for Water	15.40%	8.95%	9.87%	5.49%
GPM of Unaccounted for Water	4	2	2	2
Current Annual Water Budget	\$116,749.59			
Projected Annual Water Sales / Gal	16,000,000			
Number of metered accounts	352			
Gallons included in minimum annually	4,224,000			
Gallons not included in minimum	11,776,000			
Monthly minimum	\$15.00			
Monthly minimum income generated annually	\$63,360.00			
Budget balance	\$53,389.59			
Remaining water cost per 1,000 gal	\$4.53			



Assisting Vale with Water Loss

By Nick Jackson, SDARWS Circuit Rider

This past February, Joyce Wulf, Billing Clerk for the Vale Sanitary District and the Town of Vale, contacted South Dakota Rural Water requesting assistance in locating a significant water loss. Vale Sanitary District purchases their water from the Butte Meade Sanitary District, and she reported that their usage was nearly 26,083 gallons per day for only 60 connections.

I traveled to Vale to meet with Operations Specialist Max Timm and reviewed maps of the distribution system. Timm stated that Vale Sanitary District has been plagued with leaks whenever the water pressure exceeds 40psi – and that it had been happening since 2012. He reported that there was a difference of approximately 600,000 gallons a month between the normal Butte Meade master meter readings. Because of this high water usage, Vale Sanitary District's Board requested the distribution system be tested and any faults documented for repairs.

After reviewing the maps, it was determined that Vale Sanitary District could not be divided into smaller zones to help determine the leaks. Without being able to isolate Vale into zones, we were unable to conduct water pressure or flow tests. So, utilizing SDARWS locators and leak detection listening equipment, we tested each valve, curb-stop and flush hydrant throughout the distribution system. During the first day of leak detection, two smaller leaks were identified on a couple of curb stops – but they

didn't add up to the major water loss that was being reported. On the second day, we hit the jackpot when two significant areas of leakage were discovered – one on a water main saddle, and the other on a service line right before the water meter. This was good news... mixed with some bad.

After meeting with Wulf and sharing the deficiencies we found, it was our recommendation that the whole water distribution system be replaced. SDARWS offered our continued services to assist with an Engineering study plan – as well as help filing the necessary paperwork for financial help through USDA Rural Development. The people of the Vale Sanitary District were very happy we were able to locate the problem, and thanked us for the assistance and expertise in locating the troublesome leaks as well as the guidance for the replacement of the ailing water distribution system. The 20,000 gallons per day loss Vale was experiencing translates into the equivalent of \$1,436.00 per month – or \$17,232 per year (not including normal service fees) for the water purchased from Butte-Meade Sanitary Water District. By investing some money in replacing the current distribution system, Vale will be in a much better place when it comes to running an efficient system.

If your system is experiencing an unexplained water loss, please give us a call. We have staff on both sides of the state with years of leak detection expertise and would love to put our knowledge and tools to work. Give us a call at 605-556-7219. 💧



Circuit Rider Nick Jackson using locator to find curb stops under the snow



The largest leak in Vale was found on a main down an alleyway.

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Test your knowledge

with these certification practice questions

1 A reduced pressure zone back-flow preventer will:

- a. Stop back siphonage but not back pressure
- b. Stop back pressure but not back siphonage
- c. Stop back pressure and back siphonage
- d. None of the above

2 A portion of cast iron pipe after 5 years of use shows a white colored scale ½ inch thick on the inside walls. This means that:

- a. The water has been corrosive
- b. Tuberculation has occurred
- c. Red water will soon become a problem
- d. The water is depositing carbonates

3 When using chlorine tablets to disinfect pipelines, it is best to place the tablets:

- a. At the end you will fill first
- b. On the inside top
- c. On the inside bottom
- d. Anywhere in the pipe

4 A substance added to water to promote the formation of a protective film in pipes is known as:

- a. A passivator
- b. An inhibitor
- c. Sacrificial anode
- d. A pacifier

5 Cavitation is a problem with pumps. What can be done to prevent it from occurring?

- a. Reduce the suction head
- b. Clear the blow off valve
- c. Reduce the suction lift
- d. Place another pump on the line

6 Cathodic protection means protection against:

- a. Corrosion
- b. Contamination
- c. Hardness
- d. Back-flow

7 In instances where non-potable water or toxic waste systems are found to be connected directly with a potable water system, the preferred method for prevention of contamination is:

- a. Carrying 0.5 mg/L free chlorine residual in the potable water system
- b. Maintaining a high pressure on the safe water line
- c. Providing rapid cutoff valves in several locations
- d. Installing physical separation (air gap) between the two systems

8 Which of the following is found mainly in ground water sources and forms a precipitate when oxidized?

- a. Hydrogen Sulfide
- b. Methane
- c. Radon
- d. Iron

9 Reservoir turnover is?

- a. Related to pH of the water
- b. Caused by denser water at the surface sinking toward the bottom
- c. Caused by wind cracking ice on the surface
- d. Needed to control algae

10 What does the term surface runoff refer to?

- a. Rainwater that soaks into the ground
- b. Rain that returns to the atmosphere from the earth's surface
- c. Surface water that overflows the banks of the rivers during flood stage
- d. Water that flows into the rivers after a rainfall

Answer Key

1) C 2) D 3) B 4) B 5) C
6) A 7) D 8) D 9) B 10) D

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Aeration of Lagoons in the Spring

By Jerry Hemeyer, SDARWS Wastewater Technician

It is easy to know when Spring is in the air – when the wind blows in just the right direction, the smell from the lagoons will let you know the ice is melting. To combat this problem, try aeration – a simple, yet effective way of reducing the odor from ponds. This process is done by utilizing a water pump to spray the pond water up into the air. This process not only inputs oxygen in the water, but stirs the water and aids in equalizing the temperature of the pond. This simple process actually stops the pond from turning over, thus eliminating the nasty odors.

Over the years, many Operations Specialists have experimented with aeration. Gary Ladwig, Maintenance Supervisor for the City of Bryant, has perfected the art of aeration. He starts by setting up a 4-inch water pump on the shore; the suction line is put 15 feet into the water using two plastic barrels tied together and tethered to shore with a piece of steel. The discharge pipe consists of four or five pieces of 4-inch PVC attached to a flexible hose. Two barrels are then attached to the shore with another piece of steel in place to hold the discharge about seven feet above the water. On the end of the discharge hose is a screen from a suction hose – this helps sprays water in small streams which splash into the pond and introduce oxygen. A 100-gallon gas tank set atop a trailer keeps the pump running 24 hours a day. Every two days, the pump is stopped for an oil change, and the gas tank is refilled. ♠



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SD RURAL WATER TRAVELS TO WASHINGTON, DC

Dennis N. Davis
Executive Director

This year 15 people representing six rural water systems and the State Association traveled to Washington, D.C. to participate in the NRWA sessions and private meetings with Senators John Thune and Mike Rounds, Congresswoman Kristi Noem, and USDA Rural Development staff.

The goal was to focus our efforts on informing our elected leaders of the needs and concerns of water and wastewater utilities in South Dakota, and hopefully our leaders were receptive to help keep funding for rural water utilities in South Dakota alive.

The theme of this year's Rally was "Let your voice be heard!" During the 2015 opening session, priorities were established to maintain funding levels for specific programs that provide assistance to small systems across the country. South Dakota Circuit Rider Nick Jackson posted the flag at the opening session. NRWA President Charles A. Hilton addressed the crowd by reminding them of the power of an association – and even gave a shout-out to South Dakota during his introductory speech. Congressman Robert Aderholt from Alabama spoke to the crowd about how rural water drives rural economies. Lisa Mensah, Under Secretary for Rural Development touched on the programs and appropriations that have assisted rural communities and the future of such programs. NRWA legislative updates were provided by NRWA Lobbyists Bill Simpson, Fitz Elder and Mike Keegan. Rural Water FY15 appropriations priorities were established as follows:

USDA Circuit Rider	\$16.397 million for FY16
USDA Source Water	\$6.5 million for FY16
EPA Technical Assistance	\$15 million for FY16

The Circuit Rider request has raised slightly to \$16.397 million and would maintain the current number of circuit riders in the field (117 nationwide). The USDA Source Water program stayed at a request of \$6.5 million – which would help bring a source water protection specialist to each state in order to better meet current demand. The EPA Technical Assistance request of \$15 million would continue a competitive grant program to provide rural communities with the training and technical assistance necessary to improve water quality and provide safe drinking water.

Besides the NRWA funding requests, appropriations for USDA Grant/Loans (\$464.9 million), EPA Drinking Water SRF (\$906.9 million), and EPA Clean Water SRF (\$1,448.9 billion) were being supported by Rally attendees.

Your support makes a difference in our fight to preserve rural water loan and grant assistance. Thanks to everybody who attended the Rally and to all the systems who have sent in support letters. We couldn't do it without you! To see more pictures of the 2015 Rural Water Rally, please turn to page 16, or visit our Facebook page at www.facebook.com/SDRuralWater. ♦



From Left to Right: Larry Wasland, Dan Carlson, Congresswoman Kristi Noem, Dennis N. Davis, Larry Sterling, Nick Jackson, Sarah Bruinsma, Jim Auen, Jennifer Bame, Karen Jencks, Randy Jencks, Senator Mike Rounds, Kurt Pfeifle, Craig Lunde, Darrell Raschke, Senator John Thune



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