TM Rural Water District

April 2019 | Volume 14, Issue 2

PROFILES IN SOIL HEALTH

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RURAL WATER SYSTEM SPOTLIGHT CLAY RURAL WATER

and

UNDERSTANDING YOUR WATER QUALITY REPORT

FROM THE MANAGER | CONSUMER CONFIDENCE REPORT

FROM THE MANAGER

Water Rates

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The TM Rural Water District Board of Directors closely monitors the cost of providing service to its users and will adjust rates and monthly minimums if and when necessary. Whenever the TM Board discusses Water Rates, they must always keep in mind the issue of fair and equitable water rates. Rates that lack uniformity, or discriminatory rates, are common in many water rates charged by different water systems. TM's goal is to select the rate plan which promotes the fact that each customer big or small pays his or her own share of the service provided without subsidizing other users in the system or being subsidized themselves by other users in the system.

The TM Rural Water District Board has deliberated over the last several years on how best to modify our system rates going forward in order to continue the goal of making them fair and equitable to all users on the system. The Board decided that the rate class which encompasses a majority of TM users needed to be broken up into multiple rate classes. The Board determined that consumers utilizing more than 20,000 gallon/month will have an incrementally higher financial responsibility for maintaining the District's Source Water, Water Treatment and Distribution Systems and Debt Service thru higher minimums which will be based on the previous year's average monthly usage. Adjusted minimums for those consuming in excess of 20,000 gallon/month also serve as a way to reserve a certain amount of capacity for each user. Example: Rate 11 reserves up to 20,000 gallons/ month of system capacity for each user in this class while Rate 15 reserves up to 100,000 gallons/ month of system capacity.

In an effort to encourage conservation the Board has also decided that any water consumed in excess of any rate class maximums on a monthly basis shall be billed at the highest rate charged by the District which is currently \$5.15/1,000 gallons

Shown on the next page are the new rate classes the District implemented effective March 1st, 2019.

Annual Water Quality Report

You will find TM's Annual Drinking Water Report on pages 13-15. Every year we are required to publish this report to all water users on our system. The report represents the results of water testing done by the District during 2018 and also gives a breakdown of the District's source waters and treatment process. TM is pleased to report that the District complied with all state and federal drinking water regulations in 2018.

Construction Projects in 2019

After a very wet 2018, Contractors will be wrapping up the relocation of TM water lines along Hwy 18 as the SD DOT continues the highway widening project between Interstate 29 and US Highway 81.

TM will be having the Water Tower south of Marion sand blasted and recoated both inside and out this year.

The District plans to construct a larger water supply line early this spring to the north side of Swan Lake due to continued construction of residential housing units in the area.

TM is also looking into rehabilitating a booster pump station in the northern part of the District up by Salem.

Repairing leaks is a big part of the maintenance that TM performs each year and we rely on our users to call in if they see a potential leak. Please do not hesitate to call if you suspect a leak and the sooner the better, fixing leaks early reduces expenses to the system which benefits all users in the District. If in doubt, call us out.

M Rural Water District Quality On Tap!

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OFFICE HOURS

8:00am - Noon & 12:30pm - 4:30pm Monday - Thursday Office is Closed Friday-Sunday and Holidays

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RATE TABLES EFFECTIVE MARCH 1, 2019

Rate 11	20,000 Gallons/Month	Rate 12	40,000 Gallons/Mont
Monthly Minimum - \$33.50		Monthly Minimum - \$43.50	
Usage	Cost/1,000 Gallons	Usage	Cost/1,000 Gallons
First 5,000 gallons	\$5.15	First 5,000 gallons	\$5.15
Next 5,000 gallons	\$4.15	Next 5,000 gallons	\$4.15
Next 10,000 gallons	\$3.10	Next 30,000 gallons	\$3.10
Any water over 20,000 gallons each month	\$5.15	Any water over 40,000 gallons each month	\$5.15

Rate 13	60,000 Gallons/Month	Rate 14	80,000 Gallons/Month			
Monthly Minimum - \$53.50		Monthly Minimum - \$63.50				
Usage	Cost/1,000 Gallons	Usage	Cost/1,000 Gallons			
First 5,000 gallons	\$5.15	First 5,000 gallons	\$5.15			
Next 5,000 gallons	\$4.15	Next 5,000 gallons	\$4.15			
Next 50,000 gallons	\$3.10	Next 70,000 gallons	\$3.10			
Any water over 60,000 gallons each month	\$5.15	Any water over 80,000 gallons each month	\$5.15			

Rate 15	100,000 Gallons/Month	Rate 17	150,000 Gallons/Month		
Monthly Minimum - \$73.50		Monthly Minimum - \$114.00			
Usage	Cost/1,000 Gallons	Usage	Cost/1,000 Gallons		
First 5,000 gallons	\$5.15	All water up to 150,000	\$3.10		
Next 5,000 gallons	\$4.15	gallons each month	\$5.10		
Next 90,000 gallons	\$3.10	Any water over 150,000	\$5.15		
Any water over 100,000 gallons each month	\$5.15	gallons each month	دد		

Rate 18	200,000 Gallons/Month	Rate 19	400,000 Gallons/Month		
Monthly Minimum - \$139.00		Monthly Minimum - \$275.00			
Usage	Cost/1,000 Gallons	Usage	Cost/1,000 Gallons		
All water up to 200,000 gallons each month	\$3.10	All water up to 200,000 gallons each month	\$3.10		
Any water over 200,000 gallons each month	\$5.15	Any water over 200,000 gallons each month	\$5.15		

TM RURAL WATER DISTRICT'S MISSION

TM Rural Water District's goal is to improve the quality of life in the rural and small community areas of our state. The District is committed to providing the highest quality drinking water possible at the lowest reasonable cost consistent with good business practices. As a water user district, the only other product that we have is the service we provide the users. The District goal is that the service is offered with the highest standards.

TM TRIVIA

In this edition of *Quality on Tap*, be the first person to call Tanya with correct answers to the following questions below at 605-297-3334 to receive \$10 off of your next water bill. A second place drawing for \$10 off your next water bill will also be taken from those people who call in after the initial winner, so don't give up.

How about some Trivia on the product we provide for our users. Let's test your knowledge of water. Good Luck!

TM Rural Water District

MARCH 25™ TM Rural Water District Board Meeting in Parker at 7:00 PM

> FRIDAY APRIL 19[™] Good Friday Holiday

APRIL 22[№] TM Rural Water District Board Meeting in Parker at 8:00 PM

MAY 20[™] TM Rural Water District Board Meeting in Parker at 8:00 PM

MONDAY MAY 27TH Memorial Day Holiday

If you have an emergency, please call the office at 605-297-3334.

MONTHLY PAYMENT OPTIONS

Cash, Check, E-Check, Credit Card or Money Order Automatic Bank Deductions (ACH)

www.tmruralwater.com
(click "Pay Online Now" button)

Water Trivia

- 1. Water regulates the earth's temperature? True or False
- 2. At what degrees Celsius does water freeze?
- 3. At what degrees Celsius does water boil?
- 4. Which weighs more a cubic gallon of water or a cubic gallon of solid ice?
- 5. What do you get when you combine one oxygen atom with two hydrogen atoms?
- 6. Water is the only substance that is found naturally on earth in three forms. What are these three forms?
- 7. What is another name for hard water?

TM Rural Water District employs six full-time employees from three different communities in the areas that we serve. Whenever possible we attempt to buy our supplies and consumables locally and prefer to hire local contractors when the need arises. We are thankful to have the ability to serve the communities and rural areas in which we live and hope that our service will continue to be a benefit to everyone in our District.



EROSION: ONE OF THE GREATEST ISSUES FACING AMERICAN SOILS

There are many issues facing the modern-day farmer, though most of them are nothing that new. After all, nature has always kept us on our toes in the form of drought, flood, and other extreme events. You would think that with technological advances and increased agricultural acumen, however, we would have taken steps towards reducing the negative effects of nature... or at least be part of the solution, not the problem. Unfortunately, when it comes to erosion, it would appear that we ourselves are the ones to blame for digging us into a deeper ditch.

Now certainly, erosion has always been in existence. It is not necessarily a man-made problem, but unlike many other agricultural issues, it has come to the forefront largely because of human activity. Nowhere is this more apparent than in the Midwestern United States. Here, soil erosion has grown so extreme that Jerry Hatfield, director of the USDA-ARS National Laboratory for Ag and the Environment, believes that we're losing, on average, five tons of soil per acre per year due to erosion (with higher-end areas losing closer to 100 tons per acre per year).

These numbers by themselves can be a bit staggering, but they become even more alarming when we consider soil replacement rates. Essentially, many believe we're losing soil faster than soil can be restored, thus, if nothing changes, the situation will only become more dire.

SOIL EROSION: DIGGING DEEPER

"(Erosion rates are) all rainfall driven," says Hatfield. This reality may seem to contradict the above statement that increased erosion is a man-made problem. As seems to always be the case when it comes to agriculture, a closer look into things reveals the greater truth.

Spring is generally the wettest time of year. For the farmer who has, say, a corn and soybean rotation whose fields lay fallow in the spring, there's no crop present to help transpire the water or protect the soil. Compounding this issue is the practice of conventional tillage which exposes soil, breaks down soil structure and thereby, decreases pore space and infiltration. The result? Runoff which leads to erosion. There are even some studies out there that suggest that erosion increases exponentially as runoff increases.

Still, there is some hope. Seven million acres have already been enrolled in the ¹Conservation Stewardship Program (CSP) in South Dakota alone to reduce soil erosion and improve water quality as of 2017. The reality is, however, that while this is a needed step in the right direction, it's more of a crawl than a leap. So what can we do? Once again, if our research is of any indication, it appears that the four principles of soil health are needed. This fact isn't lost on Chad Watts, executive director of the Conservation Technology Information Center in Indiana.

"You protect land from erosion and reduce the amount of sediment you put into streams with these (types of soil health) practices," Watts says, though he knows changing the hearts and minds of traditional farmers will take more convincing. That's where Midwest native and soil health specialist Doug Peterson comes in. their religion," Peterson says.

The notion that conventional till decreases soil stability, soil function and enhances erosion and runoff is a tough pill to swallow for many. After all, most farmers were raised to believe that the very reason they should use conventional till is to help reduce such issues. Unfortunately, regardless of how strongly we adhere to our beliefs, that does not necessarily make them true. In this regard, Peterson doesn't beat around the bush.

"There is no agronomic or economic reason for tillage to be justifiable anymore," Peterson says. "It destroys everything that restores soil function."

We saw strong evidence of this firsthand in South Dakota when the NRCS' Jeff Hemenway walked us through an eye-opening slake test comparing infiltration in no-till versus conventional till soils.

"The tilled soil dissolves rapidly (in a slake test)," Peterson notes. "In the presence of rain, without the glues or [root] exudates, the soil particles in the aggregates break loose, and they are very susceptible to erosion."

EROSION: NOT SIMPLY AN ISSUE OF CONVENTIONAL TILL

It's become easy for advocates of no-till and regenerative farming to "bully" the idea of conventional till. Once again, however, a closer look at things makes it evident that converting to no-till is not a fix-all. If we must view it in such terms, tillage is not the enemy. If a farmer adopts the first principle of soil health (do not disturb), but neglects the other three, they're only seeing a fraction of the picture. When it comes to erosion and enhancing infiltration, the second principle of soil health (keep the soil covered) is just as crucial. This is one of the many reasons why cover crops have seen a significant rise in recent years.

When you have a living canopy and live roots directly beneath the soil, you can reduce runoff head on. Instead of bombarding the soil, rain hits the canopy and slowly trickles down the plant into the roots. This slow-down effect on raindrop impact is one of the chief benefits of the third principle of soil health (keep a live root in the soil as many days as possible). The result is infiltration as opposed to runoff and erosion.

In this way, it seems rather evident that the solution to high erosion rates comes through the application of principles of soil health. Specifically, through the use of no-till, diverse rotations and cover crops (i.e., no fallow periods) which keep the soil covered and keep a live root in the ground year-round, we address the core issue that runoff and erosion are simply symptoms of: degraded soils.

"Your soil is more than just the medium in which you grow plants," Watts says. "The downfall of many civilizations was when they degraded their soil to the point that it was no longer productive. When soil degrades to the point of no return, that's when civilizations begin to fail. It behooves you to protect your soil."

To learn more about conservation practices, visit the NRCS' Soil Health Page at http://meritormyth.com/

"The practice of tillage is more ingrained in most people than

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PROFILES IN SOILHEALTH: A SYSTEMS APPROACH

Chad Schooley keeps an eye on the past. His rough farmer's hands work in the present. His boots tread ground plowed by his father, grandfather, and great grandfather. With a mind on the future, he walks the acres of his Cabin Still Cattle Company – the rolling hills of Hamlin County, South Dakota, and looks for balance.

Sitting on the end-gate of his pickup truck, young son Beau beside him, Schooley says, "I'm not a firm believer that we need to turn everything back into pasture, but we need an equal balance. If our farming practices continued like they were when our great grandfathers were farming; where we plowed all the land every year, where we were losing topsoil and we had no trees - if we had kept farming like that, I think we'd be in a worse situation. We have turned the corner. We're building the soil back up, and we've got our soil headed back to where it once was."

"On our farm we produce grass for cattle, corn and beans, wheat and oats for feed," he explained. "We raise cover crops after small grains are harvested for winter grazing for cattle, so we're a pretty diverse operation." Chad started converting some tillable ground to warm season grasses over 15 years ago. Two years ago, he converted more tillable acres to warm and cool season perennial grasses. This added pastures for spring calving.

There was a learning curve in developing the grazing strategies. "Once we started rotating cattle through the different paddocks we could really tell that we were stretching the capacity of the grass," he said. "We extended our stocking rates by doing rotational grazing, and now we have three rotational grazing systems with up to 8 paddocks in each one." He went on to explain that the native grasses he established showed more promise than other varieties, with a better rate of gain for the cattle and a better fit for maintaining and improving soil health.

"Practices we are using are becoming widespread across the country as more people are finding the benefits," he said.

Schooley's plant community was previously diverse but non-native. He's recently reintroduced up to five species of native grasses on what was tillable ground. Even when compared to very diverse native rangelands in western South Dakota where over 200 species may thrive, he's noticed more nesting habitat for waterfowl and pheasants.

Leaning on a corral gate, he added, "One of my landlords has let me convert his tillable ground to grassland, and he appreciates the fact that we're taking care of the land and making it better. So, for him, it's not all about the economics. His land is marginal land, and now it's doing a better job in grass than it was in tillable. We are getting close to the same monetary results as we were doing by tilling it."

He says that when converting tillable land into grass, there can be lost

revenue at first, but up-front costs are not as intense. Once grass is planted and established, costs go way down.

This article was provided by the USDA Natural Resources Conservation Service - SD

200 Fourth Street SW. Huron. SD 57350

www.sd.nrcs.usda.gov

Water quality is another important subject. It's tied to a healthy population of wildlife of all kinds. "On our grazing system one of the paddocks won't get grazed late season and will have more cover going into the winter," Schooley says. The leftover tall grass provides shelter and feed for wild birds. "The riparian buffers are areas we no longer farm, so there are cattails coming into the creeks. Deer and pheasants live there all winter," he says with a big smile.

"We're not watering cattle out of the sloughs any more, either. We're using a central watering system that keeps cattle out of the sloughs and out of the wild bird nesting areas, so undisturbed nests produce flocks of young birds," he noted.

A buffer runs adjacent to a waterway, and a minimum width is 35 feet, with a maximum width of 180 feet on each side to qualify as a riparian buffer zone.

Water from a recent rain poured through a wetland area, making the waving grasses dance beneath the waters' bubbling surface. The water ran clear as a new glass. Schooley scanned the marsh, and his planted trees and shrubs that lined the edges of the waterway and remarked, "a lot of our water runoff in our area goes into the Big Sioux River. That's the water source for Sioux Falls. There's a big push to keep water quality better for their metro area, it's their main drinking water source. I wish everyone understood how many things are involved in grasslands from wildlife to cattle, to bees, to water quality, songbirds, butterflies, insects and the whole ecosystem," he said.

"I'm on the Conservation District board for Hamlin County, and what that means to me is I get to try to help make this land better than when we received it, to help the next generation continue to be viable and keep farming this land," Schooley continued. "Ours is a fourthgeneration farm, I have two sons very involved in the farm. My hope is that they can come on board and be a viable part of it."

"Our farm has been in the family long, long time," he said, looking over the herd of Black Angus cows and calves chewing on the wet and cold spring grass. "If my great grandfather was alive today, he'd not believe what we're doing. My mom's dad was already a conservationist. He planted trees on contours and tried to conserve the soil. My dad bought it from him, and now I'm buying it from my father, and buying my own land. We are using new practices that take us in the right direction for the next generation."

"It doesn't take long to plow up grass and plant corn," he stated. "What does take a long time is to reestablish grass and make good range land for cattle to thrive on."

Quality On Tap!



ARE YOU GUILTY of Using the Toilet as a Trashcan?

By Nick Jackson, Circuit Rider for the South Dakota Association of Rural Water Systems

While traveling across the state making visits, I had stopped into several towns and facilities asking this same question:

What are the most troublesome issues you have experience within your wastewater collection or treatment system? Surprisingly the answer wasn't what I thought – you know, aging infrastructure or treatment facilities. No, it was what goes down the toilet and into the wastewater collection system.

Although the things that you may flush down the toilet may escape your home's plumbing, the sewage blockages that occur in the larger pipes affect many more people than just your family. If what you do flush down the toilet does not make it out of your home's plumbing, the damage it can cause can be costly.

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Quality On Tap!

Backed-up drains and sewers often mean that the sanitary systems require rodding or jetting. What's usually the culprit? Everything that isn't supposed to go down the toilet! These backups can also affect other sanitary equipment such as lift stations, bar screens,

> grinders, pumps, etc. which can become worn out prematurely because of what goes down the toilet.

We know it is tempting to flush nearly anything down the toilet. It's like a black hole; just dump, flush, and it's gone – out of sight out of mind. To do this, however, is to risk damaging septic tanks, wastewater collection system, and wastewater treatment

centers, as well as causing toxic environmental pollution and the embarrassment that comes if you are found to be the cause of the problem. People don't think about this until one day they have a huge clog or septic tank problem and must spend lots of money to fix it.

WHAT NOT TO FLUSH

To help you save embarrassment, thousands of dollars in repairs, and avoid polluting the environment, pay attention to this list of things that you must never, EVER, flush down the toilet:

"Flushable" Wipes • Baby Wipes • Cleaning Wipes • Paper Towels • Tissues

These so-called "flushable wipes" are becoming increasingly popular nowadays. They are also frequently causing clogs and backups in sewage collection pipes and wastewater treatment equipment. Although some of these brands might say they are flushable on the box, DO NOT FLUSH them down your toilet. If you use these products, dispose of them in a trash can.

The other paper products (paper towels and tissues) are designed to stay together when wet and absorbs moisture and don't dissolve quickly in water.

Disposable Diapers • Feminine Hygiene Products

Just because there is human waste inside does not mean that they are ok to flush. Baby and adult diapers, as well as feminine hygiene products, are made to absorb and expand when they come in contact with liquids – not break apart in it. Dispose of all these items in the trash, not the toilet.

Fats · Oils · Cooking Grease

Grease should never be poured down any drain, period. It may look like a liquid that can easily be dumped down a drain, but when it cools, it will solidify and clog up your pipes and cause blockages within the collection system. Collect your grease in a container and throw it in the trash.

Hair · Dental Floss · Rubber Bands · String

Most of these items are not biodegradable and can cause severe clogs and environmental damage. Hair, for one, will never dissolve in water – it floats and easily gets caught on its way out into the collection system, snagging whatever comes its way.

Medications

Unused drugs, pills or pharmaceuticals, medical salves, and

ointments, should never be flushed! Although some believe this to be a safe way to dispose of these things, it is not. Toilet water cannot destroy the active ingredients in medicines. The wastewater treatment facilities are not designed to remove various chemicals found in drugs, and that means they are not removed and get pumped back into creeks, rivers or groundwater aquifers. These chemicals are dangerous to people, animals, aquatic life and the environment.

Food

When disposing of leftover food, never flush it down the toilet. Some may argue that food is biodegradable, and it is, but it can lodge in plumbing and create one powerful clog.

Cleansers • Stains • Solvents • Thinners • Pesticides • Fertilizers • Automotive Products

If it is not meant to clean the toilet, don't flush it down. Combinations of these can be acidic, caustic, poisonous fumes or even cause explosions.

Animal Excrement • Cat Litter

Some product say their cat litter is flushable, but with newer water saving toilets, there is just not enough water to keep the litter moving within the collection system which can cause blockage. Dried animal feces gets dehydrated and becomes hard as a rock and may not dissolve – which can get caught somewhere in the collection system.

The list can go on and on, and it's time to take responsibility for using toilets as they were originally intended. What does that leave? Not much! Human excrement and regular toilet paper are the only things you should flush down your toilet.

Even the very thick and plush toilet paper can sometimes be tough to break down. A courtesy flush is occasionally necessary to avoid clogging the drain. We love Charmin Ultra too, but be conservative with your toilet paper use.

Please think twice about flushing these everyday items down the toilet, not only will it save you from causing blockages, but will also keep your community's wastewater system in good working order.



"Flushable" wipes that were causing issues and were pulled from a wastewater collection system in South Dakota.



This sewer main was found to be completely clogged with grease in Madison, SD.

Quality On Tap!

SYSTEM SPOTLIGHT

CLAY RURAL WATER SYSTEM

n January 1975, Clay County Extension Agent Bob Schurrer conducted a survey of every farm and landowner in the county requesting information on water quality and availability. They were also asked if they were interested in developing a rural water system. Over half of those surveyed indicated they were interested in such a system.

Wells in parts of the county were very high in minerals. At the time, many rural residents had their water hauled to cisterns on their farms and acreages.

In March of 1975, three informational meetings were held across the county to explain the idea of a rural water system. Convenience was one of the main themes touted at the meetings. Response at the informational meetings was favorable, and a steering committee was formed to further investigate the idea of a rural water system.

On April 29, 1975 the first organizational meeting was held at the 4-H Center in Vermillion. Approximately 60 rural residents were in attendance. With a favorable outlook, the steering committee was elected as a 12-member Board of Directors. Ken Mockler of Vermillion was elected Chairman. Jack DeVany, a rural resident and interested member, volunteered to guide the group as the water system attorney. Clay Rural Water System was officially incorporated on July 21, 1975.

The Board of Directors, along with Schurrer and DeVany, were about to undertake one of the greatest efforts since rural electrification some 40 years earlier. With little to guide them in the way of previous rural water system experience, the board and others set out to bring quality water to rural Clay County.

The main question the young Board had to answer, was "Why a rural water system?" Many rural residents hauled their water from some nearby community. A rural water system would bring water directly to their farm or residence. Improved quality would save on plumbing fixtures and pipes. Livestock would have a dependable supply of water during periods of drought. Pressure from the rural water system would be constant. But the demand was not limited to Clay County, so the scope expanded to include surrounding areas, including Union County.

The water system hired the engineering firm DeWild Grant Reckert and Associates (DGR) of Rock Rapids to ensure they had sound technical advice. A feasibility report was completed by DGR in January 1976. It stated the prospect of a system was feasible and the decision was made to move forward. The study indicated there were 3,000 persons, 1,700 head of dairy cattle, 59,000 head of feeder and stock cows and 94,000 head of hogs and sheep in the project area.

The first annual meeting of the water system was also held in January of 1976. Ernest Schmidt of Vermillion was elected Chairman. The system wasted no time in signing up members. Meetings were held in Wakonda, Garryowen, the SE Research Farm and in Vermillion. In three days, 730 locations signed up. Later signups would bring the total to 980. Each individual was asked to pay a \$200 hookup fee.

The Board submitted a loan and grant application to the Farmers Home Administration in February 1976. Good news came in the fall of 1977 as funding was secured. A total of \$4.5 million dollars was received. The financing consisted of a \$3,350,000 loan and a \$660,000 grant. A \$300,000 grant from the state was later received. Hookup fees paid by new members covered the balance of the funding needs.

Construction began quickly and was evident all around Clay and Union Counties.

At the end of construction, Clay Rural Water was serving nearly 1,000 members. The total population supplied with quality rural water was approximately 3,500 people and thousands of head of livestock. From an idea to reality, the entire undertaking took just five years.

Since 1976, Clay Rural Water has more than doubled its membership and greatly increased capacity. Initial system treatment capacity was 1.2 million gallons per day (MGD), and current capacity is 1.5 MGD. Storage capacity has increased from 760,000 gallons to 1.21 million gallons. In 1996 the water plant was remodeled into a softening plant, greatly improving water quality.

The majority of the system is served by the Wakonda Water Treatment Plant. This 1.2 MGD plant utilizes lime softening and is supplied by two wells located in the Lower Vermillion-Upper Missouri Aquifer. Each well has a capacity of more than 1,000 gallons per minute (gpm). Users located in southern Union County are served by the Wynstone Water Treatment Plant. This plant utilizes reverse-osmosis treatment and is supplied by two wells located in the Missouri Elk Point Aquifer. Each well has a capacity of 350 gpm. Total membership is now 2,430.



CLAY RURAL WATER SYSTEM



The first Board of Directors 1975 - 1980



2018 Clay Board of Directors: Back L to R: Jim Schurdevin, Russ Lilly, Randy Ronning, Dave Reiff, Duane Holoch. Front Row L to R: Glen Gilbertson, Vice President; Robert Wood, President; Randy Huot, Sec.-Treas.; Pat Manning.

DIRECTORS:

Robert Wood – President Glen Gilbertson – Vice President/SA Director Randy Huot – Secretary/Treasurer Duane Holoch – Director David Reiff – Director Randy Ronning – Director Pat Manning – Director Russ Lilly – Director

STAFF:

Greg Merrigan, Manager Donna Henriksen, Office Manager Leanne Brown, Accounting/Bookkeeper Tom Hollingsworth, Operations Supervisor Phil Iverson, Operations Specialist Rob Ganschow, Operations Specialist Andy Ganschow, Operations Specialist

STATISTICS:

Hookups: 2,430

Miles of Pipeline: 1,350

- Water Source: Groundwater (Lower Vermillion-Upper Missouri), Missouri River @ Elk Point
- **Counties Served**: Clay, Union, parts of Lincoln, Turner, and Yankton
- Towns Served Individual: Burbank, Meckling, Deer Run

Towns Served Bulk: Wakonda, Gayville



R U R L W A T E R C R O S W O R D & W O R D S C R M B L E C O N T E S T

Water Quality Testing



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 <u>www.sdarws.com/crossword.html</u> with the correct phrase by April 8th, 2019 to be entered into the \$100 drawing.

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 Clifford (Rick) Van Vleet who had the correct phrase of "walking in a winter wonderland" for January 2019.

Quality On Tap!



Understanding Your WATER QUALITY REPORT

The Consumer Confidence Report (CCR) is an annual water quality report that a community water system is required by law to provide to its customers each year by July 1st. Your CCR can help you make informed choices about the water you drink.

Your CCR Provides Need-To-Know Information



Where yourwater comes from—such as an aquifer, lake, river, or other source.

A list of **regulated contaminants** that the CWS detected and the level.



Potential **health effects** from consuming contaminated water and additional safeguards against water-related illnesses.



Contaminant levelsin your CCR compared to national standards and any violations of health-based standards.

Questions Or Concerns About Your CCR



CALL EPA'S SAFE WATER HOTLINE at 1-800-426-4791 if you would like to know more about your CCR, how to locate your local water company, or for more resources.



CONTACT YOUR HEALTHCARE PROVIDER

if you are sensitive to contaminants or if you are at higher risk of infections.



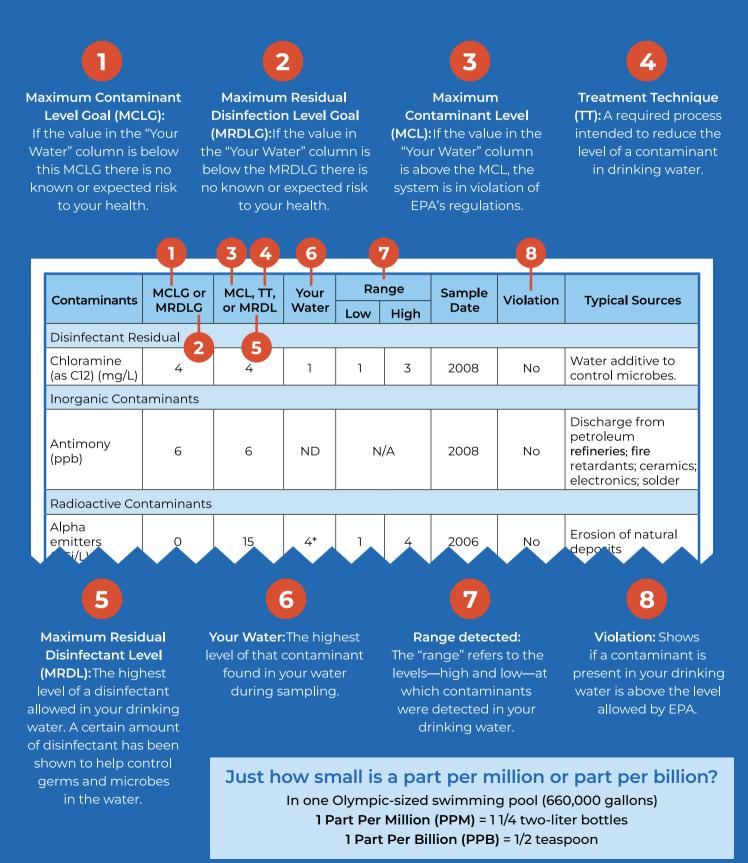
CONTACT YOUR WATER COMPANY for information on how to remove chemicals and microbes from your water source.

For more information, visit: epa.gov/ccr



Sample Water Quality Data Table

Your CCR will also include a water quality data table that may look similar to this:



Quality On Tap!

TM Rural Water District Annual Water Quality Report

January 1, 2018 - December 31, 2018

Water Quality

Last year, the TM Rural Water District monitored your drinking water for possible contaminants. This brochure is a snapshot of the quality of the water that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies.

TM Rural Water District is committed to providing our customers with safe reliable drinking water.

Water Source

We serve more than 1,485 rural residences and provide wholesale water to the communities of Canistota, Hurley, Marion and Viborg in addition to supplying treated water to an ethanol plant located NW of Marion, SD an average of 1,990,000 gallons of water per day. Our water is groundwater that we produce from local wells.

TM currently has two different sources of ground water that we treat and distribute to our customers.

The Dolton Aquifer, named after and located in the area of Dolton, South Dakota. It is the original aquifer that supplied the source of water for TM and provides a portion of the water used by our customers today.

The Upper Vermillion Missouri Aquifer otherwise known as the Basal Aquifer is the other source of ground water currently utilized by the District and is the larger of the two aquifers. The UVM Aquifer in some places is actually below the Dolton Aquifer.

Finished water is finally blended with a small amount of finished water supplied by BY Water User District and Lewis & Clark Regional Water System.

The state has performed an assessment

of our source water and they have determined that the relative susceptibility rating for the TM Rural Water District public water supply system is low.

For more information about your water and information on opportunities to participate in public meetings, call the TM Office at 605-297-3334.

Additional Information

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturallyoccurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Water Treatment

The water treatment plant located just to the east of Dolton, South Dakota is where TM brings in the raw water from the Dolton and UVM aquifers.

The water treatment plant utilizes conventional lime softening treatment where raw water is mixed with a lime slurry which then reacts with the calcium and manganese in the water. The calcium, manganese and other solids bond to the lime and settle to the bottom leaving only clarified water that continues onto the next stage of the treatment process.

Carbon Dioxide is then added to the water to further soften the water before it is sent to the filtration process which filters the water through 18 inches of anthracite coal and 12 inches of fine sand where any remaining suspended matter is removed from the water.

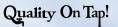
Chlorine is then added to the water at the rate of approximately 3.5 parts per million. Chlorine is added in order to kill any bacteria that the water may come in contact with during its travel through the distribution system. The water then flows to the underground storage units under our plant where the chlorine is thoroughly mixed before being sent out into the distribution system.

Water Distribution

The TM water distribution system is comprised of eight high service pumps, three booster stations, four water towers, and approximately 900 miles of water lines. Water is distributed to customers in six different serving areas in the District. Service areas are created when water is pumped or gravity fed from one service area to another and are typically categorized as having different hydraulic gradients associated with them.

Additional Information from the EPA

In order to ensure that tap water is safe



to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants can be obtained by calling the Environment Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

If present, elevated levels of lead can health cause serious problems. especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The TM Rural Water District public water supply system is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/ lead.

Detected Contaminants

The tables shown on page 15 list all the drinking water contaminants that we detected during the 2018 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 - December 31, 2018. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Definition of Terms

These definitions are provided in order for you to better understand the results of the testing shown below.

Questions?

TM Rural Water District firmly believes that it is important that our users read and fully understand this yearly report. We would encourage anyone that has any questions or concerns to contact the TM Rural Water District Office during normal business hours at 605-297-3334.

Definition of Terms

These definitions are provided in order for you to better understand the results of the testing shown on page 15.

Parts per million (ppm) or Milligrams per liter (mg/l) – one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/l) – one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/l) – a measure of radioactivity.

Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one in a million chance of having the described health effect.

Maximum Contaminant Level Goal (MCLG) – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water. For turbidity, 95% of samples must be less than 0.3 NTU.

Nephelometric Turbidity Unit (NTU) – is the cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality.

Summary of 2018 Detected Contaminants in TM's Water

Antimony – occurs as a result of discharge from petroleum refineries; fire retardants; ceramics; electronics; and solder. The levels detected are well below those allowed by the EPA.

Arsenic – occurs as the result of natural deposits or from runoff from orchards. The levels detected in 2018 are well below those allowed by the EPA.

Barium – occurs as a result of erosion of natural deposits. The levels detected in 2018 are well below those allowed by the EPA.

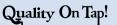
Chromium – occurs as a result of erosion of natural deposits. The levels detected in 2018 are well below those allowed by the EPA.

Fluoride – is added to our water to promote healthy teeth. The optimum Fluoride level in water is 1.2 ppm.

Selenium – a naturally occurring substance found in the soil and rocks of this region. The levels detected in 2018 are well below those allowed by the EPA.

Nitrite (as Nitrogen) – can come from runoff from fertilizer use; leaching from septic tanks or erosion of natural deposits. Levels detected in 2018 are well below those allowed by the EPA.

Lead and Copper – Levels are normally a function of home plumbing fixtures. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than at other homes throughout the system as a result of the materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may want to have your water tested. Additional information is available from the Safe Drinking Water Hotline (I-800-426-479I)



2018 TABLE OF DETECTED CONTAMINANTS FOR TM RURAL WATER DISTRICT (*EPA ID 0999*)

				Highest Level			
		Test Sites >	Date	Allowed	Ideal		
Substance	90% Level	Action Level	Tested	(AL)	Goal	Units	Major Source of Contaminant
Copper	0.1	0	09/15/16	AL=1.3	0	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from
							wood preservatives.
Lead	1	0	09/14/16	AL=15	0	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
				Highest			
	Highest			Level	Ideal		
	Level		Date	Allowed	Goal		
Substance	Detected	Range	Tested	(MCL)	(MCLG)	Units	Major Source of Contaminant
Arsenic	2	5	08/04/14	10	0	ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics
							production wastes.
Barium	0.015		08/04/14	2	2	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposit
Chromium	1.1		08/04/14	100	100	ppb	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	0.56		10/09/18	4	4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from
							fertilizer and aluminum factories.
Haloacetic Acids (RAA) *	10.6		08/21/18	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Haloacetic Acids (RAA)	11.7		08/28/18	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Selenium	1.6		08/04/14	50	50	ppb	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Total trihalomethanes (RAA) *	28.4		08/21/18	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Total trihalomethanes (RAA)	16.0		08/28/18	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.

2018 TABLE OF DETECTED CONTAMINANTS FOR LEWIS & CLARK REGIONAL WATER SYSTEM (EPA ID 2288)

				Highest Level			
		Test Sites >	Date	Allowed	Ideal		
Substance	90% Level	Action Level	Tested	(AL)	Goal	Units	Major Source of Contaminant
Copper	0.0	0		AL=1.3	0	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead	0	0		AL=15	0	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
	Highest			Highest Level	Ideal		
	Level		Date	Allowed	Goal		
Substance	Detected	Range	Tested	(MCL)	(MCLG)	Units	Major Source of Contaminant
Fluoride	0.74	0.62 - 0.74	02/27/18	4	4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen)	0.5		11/06/18	10	10	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

2018 TABLE OF DETECTED CONTAMINANTS FOR B-Y WATER DISTRICT (EPA ID 0865)

Substance	90% Level	Test Sites > Action Level	Date Tested	Highest Level Allowed (AL)	ldeal Goal	Units	Major Source of Contaminant
Copper	0.1	0	07/28/16	AL=1.3	0	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead	2	0	07/27/16	AL=15	0	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
Substance	Highest Level Detected	Range	Date Tested	Highest Level Allowed (MCL)	ldeal Goal (MCLG)	Units	Major Source of Contaminant
Fluoride	0.89	0.48 - 0.89	01/08/18	4	4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Haloacetic Acids (RAA)	29.23		12/03/18	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Total trihalomethanes (RAA)	39.83		12/03/18	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.

Please direct questions regarding this information to Mr. Jay Jorgensen with the TM Rural Water District public water system at 605-297-3334.

TM Rural Water District Box 445 Parker, SD 57053

www.tmruralwater.com 605-297-3334

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Water bodies can be used for purposes such as recreation (e.g. swimming and boating), scenic enjoyment and fishing, and are the home to many aquatic organisms. To protect human health and aquatic life in these waters, water quality standards (WQS) are established. WQS are provisions of state, tribal or federal law that describe the desired condition of a water body and the means by which that condition will be protected or achieved. Further, WQS form a legal basis for controlling pollutants entering these waters.

Standards are typically defined in terms of an acceptable concentration or level of a particular chemical, physical or biologic parameter. For example, in South Dakota, for waters designated as drinking water supplies, the concentration of nitrate (NO3-) cannot exceed 10 milligrams per liter (mg/L). Waters designated as coldwater fisheries (trout streams), water temperature cannot exceed 65°F. If swimming immersion recreation (in government speak) is the goal, levels of Escherichia coli (E. coli) bacteria in excess of 235 colonies per 100 milliliters of sample are considered problematic.

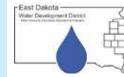
It is important to understand that while WQS have been established for most water bodies in the State, compliance with the WQS does not mean that the water is completely free of any possible contaminants. The established standards most often reflect the best scientific estimate of when the potential risk to human health, etc., is no longer statistically acceptable. Although the water might be considered safe from a regulatory standpoint, contaminants may be, and most likely are, still present.

> When presenting water quality information, the results of a particular water quality test are often expressed as either pass or fail. A nitrate reading of 9.0 mg/L would be considered 'acceptable,' as it is below the 10 mg/L WQS. However,

> > background nitrate levels in South Dakota waters rarely exceed 1-2 mg/L, so the 9.0 reading is strongly suggestive of a problem that ought to be addressed, even if it technically meets the WQS.

There is nothing magic about WQS that would mean that compliance translates to zero risk. Similarly, violation of WQS does not mean that interaction will result in certain harm. It is important to know not only what is in your water, but also what this really means.

What are South Dakota's water quality standards? They can be found in Chapter 74:51:01 of the Administrative Rules of South Dakota. https://sdlegislature.gov/Rules/DisplayRule. aspx?Rule=74:51:01



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