GROWERS IN NORTH PLATTE VALLEY FACE CRITICAL WATER LOSS WITH CANAL DAMAGE

By Gary Stone - Extension Educator, Jessica Groskopf - Extension Educator for Agricultural Economics, David Ostdiek - Communications Specialist, Panhandle RED

Post July 18, 2019—University of Nebraska – Lincoln (Institute of Ag and Natural Resources)

Surface-water irrigators in the North Platte River Valley south of the river in western Nebraska and eastern Wyoming have lost their water supply due to a washout in the main supply canal early Wednesday morning (July 17). Several irrigation districts and their customers hope to find out within a few days how long it will take to make repairs and start water flowing again.

A tunnel structure used to convey water for the Goshen/Gering-Ft Laramie irrigation districts had a partial collapse, causing a backup of water in the main canal and a breach in the canal bank near Fort Laramie, Wyo. Water delivery was halted Wednesday in the mainline canal to both irrigation districts. The U.S. Bureau of Reclamation will be on site Friday to assess the damage to the tunnel and canal and try to determine when repairs can be made and water deliveries resumed. It is possible that water deliveries will not resume for the rest of the growing season.

A basic history of and information about the North Platte River U.S. Bureau of Reclamation projects – surface irrigation, power generation and other related irrigation and power generation projects – on the North Platte River drainage by Gary Stone, Extension Educator, Panhandle Research and Extension Center.

The canal break affects approximately 107,000 acres of crops, or about 35% of the total acres irrigated by surface water in the North Platte River Valley in both states. Approximately 55,000 acres are affected in Nebraska and 52,000 acres in Wyoming. With the heat of the summer just starting, crops will not survive long without irrigation. Affected growers will potentially face crops withering in the heat and significant economic loss. Affected crops are corn, sugar beets, dry beans, and alfalfa.

Nebraska Extension and the University of Wyoming Extension are working together to share information and help growers in both states understand their options during this severe situation.

This canal is part of the North Platte Project, one of the first reclamation projects in the West, constructed about 110 years ago by the Bureau of Reclamation. Snowmelt from Colorado and Wyoming mountain ranges in the upper North Platte Basin is stored in several reservoirs on the river in Wyoming. During the irrigation season, water is released from the dams, then diverted from the North Platte River at Whalen Dam, east of Guernsey, Wyo., into the Goshen / Gering-Fort Laramie irrigation districts on the south side of the river and into the Pathfinder Irrigation District on the north side. The water is used to irrigate more than 300,000 acres in the Nebraska Panhandle and southeastern Wyoming. The project also provides hydropower, flood control, and recreation.
Well Owner Tip of the Month

After a wildfire, underground well components like the pump may not be harmed. However, if your home and yard have been burned, it is necessary to complete a visual inspection of your well system and have any damage repaired before turning on the water.

Check the following for damage:

~Wellhead - casing, cap or seal, and any other above ground piping
~Tank - pressure or storage tanks (cisterns)
~Electrical - wires and control box
~Treatment - filters/housing, tanks, chemicals

Shock chlorination or disinfection should be performed after repairs are made. Your well contractor will determine if this is required. It is important to note that shock chlorination/disinfection will not remove metals, pesticides, or other types of non-biological contamination. Do not drink or cook with the water until a water test is performed and confirms no harmful contaminants are in your water.

Hydration is Key!

During these hot summer days, make sure you and your crews are drinking plenty of water.

Did you know?
It is recommended that adults drink a minimum of 8 cups of water per day. For those working on job sites in the heat this number should rise significantly. There is not a substitute for water, so drink up!

Have something you would like to see in the newsletter? Please submit it by the 25th of the month.
As of July 2019, EWG and Northeastern University have mapped out 712 PFAS contamination sites across 49 states in the U.S.—CNBC | Kyle Walsh

“PFAS, short for per- and polyfluoroalkyl substances, are found at high levels in a concentrate for a firefighting foam called AFFF, or aqueous film forming foam, which has seeped into groundwater and at times tainted drinking water.” - Jaden Urbi, CNBC

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5 Tips for Sealing a Water Well

After you reach water with any drilling project, it’s time to put the tools away and rest in a job well done — almost. Before you hang up your work boots, you must seal your well to protect it from surface water contamination. Without proper sealing, surface water may enter the borehole and contaminate the well water. Shallow groundwater might also be contaminated, so sealing the upper section of the borehole will protect the well.

Following a few best practices to ensure you have an effective, long-lasting seal will save you headaches down the road and give you peace of mind that your well is safe from contamination.

1. Go the Depth.
Be sure to extend the seal down to the first impermeable sediment layer. If there is no such layer above the aquifer, the sanitary seal should extend to the top of the gravel pack. The sanitary seal should be placed as deep as possible, preferably at least 20 feet (6 meters) deep.

2. Mind the Gap.
To create an effective seal, make sure the borehole diameter is at least two inches greater than the casing diameter. If a 4-inch (10-centimeter) casing is being installed, the borehole should be at least 6 inches (15 centimeters) in diameter. This space is important because, without it, it’s nearly impossible to get a reliable seal deep enough to protect the well completely.

3. Use Neat Cement or Bentonite.
A cement mixture with no sand (also known as neat cement) or bentonite is ideal for creating a seal. Mixed with water, this forms a thin grout or slurry that will be pumped or poured down between the casing and the borehole wall. Drillers can use different combinations of cement and bentonite (equal parts, 5 percent, no mixture at all). When applicable, follow the guidelines of your local regulatory agency.

4. Create a Berm.
The slurry can be used to create a berm around the top of the borehole, preventing surface water from collecting around the top of the well. Bentonite chips or plugs are also available and make an effective sanitary seal. These chips will fall through any water in the borehole and swell up later. Add them slowly to prevent the formation of a bridge.

5. Wait to Install the Water Pump.
To allow time for the cement to set properly, wait at least 24 hours before installing the water pump. To meet potential government standards, the “tremie method” is used to place a sanitary seal deeper than 20 feet (6 meters). This involves pumping the slurry down a small-diameter pipe in the annular space. Extend the pipe to the top of the gravel pack and slowly raise it as the slurry is pumped in. This will prevent the formation of bridges or water pockets. An alternative is to place a large funnel on the upper end of the tremie pipe and slowly pour in the slurry. It is usually necessary to do this standing on a ladder to generate enough pressure to get the slurry to flow through the pipe.

~Adapted from National Driller
Attention Exhibitors!

If you would be willing to host a class at the 2020 convention...

Please contact Jade.

We are still looking for a couple of classes.
Jeffrey “Jeff” Williams, MGWC, CVCLD, will present the 2020 William A. McEllhiney Distinguished Lecture Series in Water Well Technology.

Williams, the vice president of Spafford & Sons Water Wells in Jericho, Vermont, and the 2016 president of NGWA, will present “Running a Business or Doing a Job: Combining Professional Expertise with Business Savvy.”

This topic is critical for groundwater industry business owners, as well as those responsible for running a company, and will address the mental transition from viewing one’s business as a series of individual jobs to an entity offering a palette of groundwater services.

In today’s business climate, planning and managing for greater profitability will determine the state of your business in the future. Williams addresses pressing questions such as:

- How do you begin thinking big picture and setting financial and production goals?
- What are the benchmarks?
- How do you manage equipment, time, and human and financial resources better?
- Are you planning your business model to include training, certifications, licensing, and equipment replacement?
- How do you bring others involved in the company in this much broader and more goal-oriented transformation?

Like all water well supply contractors and one involved in a family business, Williams understands first-hand the challenges of working with a resource that consumers can’t see until it is brought to the surface, the immediate business impacts of regional and national economic conditions, and the critical need to plan for all types of contingencies. Williams’ professional experience is varied both in water well supply and geothermal heat pump operations.

**With NGWA approval, Mr. Williams will be presenting this at the 2020 WGWA Convention.**

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12 THINGS YOU SHOULD KNOW ABOUT GROUNDWATER:

1. Aquifers hold 25 times more fresh water than rivers, lakes, and streams.
2. Groundwater provides 42 percent of global water for agriculture.
3. California withdraws more fresh groundwater than any U.S. state, roughly 12.3 billion gallons per day.
4. Groundwater is the primary drinking water source for 1.5 to 3 billion people.
5. India irrigates more farmland with groundwater – some 39 million hectares – than any country.
6. Between 1/4 & 1/3 of sea level rise is attributed to groundwater pumping.
7. Groundwater pumping in the current drought is causing parts of California’s Central Valley to sink at a rate of 5 centimeters per month.
8. Twenty-one of the world’s 37 largest aquifers are being depleted.
9. Saudi Arabia will halt domestic wheat production by 2016 because of groundwater depletion.
10. Groundwater pumping dried up 90 percent of Arizona’s desert streams.
11. India withdraws more groundwater than any country – more than double the volume of China, the 2nd biggest groundwater user.
12. Overpumping of coastal aquifers allows the ocean to push inland. Salt water has been detected 5 miles from the coast.

Retrieved from: SF Water Power Sewer
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Jade Slaymaker – Executive Director
PO Box 2705
Casper, WY 82602
Phone: 307-267-3806
E-mail: wywaterwell@gmail.com