ELBERT CREEK
WATER COMPANY

WATER IN THE WORKS

AN ELBERT CREEK WATER COMPANY QUARTERLY NEWSLETTER
ISSUE 2/JULY 2020

IN THIS ISSUE

- Interpreting the data on your ECWC water bill
- Helpful information and tips for using reverse osmosis water filtration systems
- Information and resources on drought, paleoclimatology, and tree ring data

ECWC Staff

Sean Young

Water and Wastewater Plant Manager
syoung@theglacierclub.com
970-382-6750

Anna Crona

ECWC Administrator
acrona@theglacierclub.com
970-382-6787

Find us online

https://elbertcreekh2o.com/

A Message from ECWC

Hello, and welcome to the second issue of *Water in the Works*, a quarterly newsletter published by Elbert Creek Water Company (ECWC). The purpose of this newsletter is to improve communication between ECWC customers and staff while providing customers with useful and informative articles, ideas, and updates about our distribution area. If you have suggestions for future content, please contact us! We would love to hear from you.

Interpreting the Data on Your ECWC Water Bill

Meter Readings		
Previous	Present	Usage
15656	15879	22.30

Example One

Meter Readings		
Previous	Present	Usage
2269	2321	5.20
2321	2344	2.30

Example Two

Meter Readings		
Previous	Present	Usage
375	383	0.80

Example Three

Interpreting the data on your ECWC water bill can sometimes be confusing depending on the truncation factors used by our meter reading hardware and our billing software. To the left are three example sets showing how data is presented on your monthly bill.

Our meter reading hardware tracks usage in hundreds of gallons. Because of this, in order to interpret your real-time meter read, you need to add two zeros to the back of any meter read number. For instance, in example one, the “Previous” (starting) read says “15656.” In real time, this means the meter had registered 1,565,600 gallons of water during the last meter read that was performed. Similarly, in real time, the meter registered 1,587,900 gallons of water at the time of the most recent meter read. You can determine your usage by subtracting the “Previous” number from the “Present” number, or by looking at the “Usage” column. This figure is interpreted in thousands of gallons by our billing software system. To accurately interpret this figure, treat the decimal as a comma separating the numbers in the hundreds and thousands places. For instance, the usage figure in the third example, which shows up as “0.80,” means this customer used 800 gallons of water during the month. The customer in the first example used 22,300 gallons of water during the month.

Finally, sometimes Sean needs to perform multiple meter reads in a one-month span to help track water transmission and trends. When this happens, you will see two or more lines of data in the Meter Readings and Usages columns, like in example two. Interpret the data the same as in the explanations above, but to get your final usage, add the two numbers in the Usage column together. The customer in example two used a total of 7,500 gallons during the month.

Did You Know? Reverse Osmosis Filters

Summer is upon us! Our community is bustling, even in these unpredictable times. The weather is great and hopefully you are getting outside for some summer activities. With warmer climates and runoff waters subsiding, water qualities are improving. But are you getting the cleanest water you can be? At Elbert Creek Water Company, we only have a handful of treatment regulations required by CDPHE. This might leave a little to be desired for some of our customers who may be from out of town and used to different water. Or maybe you just want to take your home's water quality to the next level. If that is the case, you may want to consider a home filtration system. There are a few different types, but the most common for homes is a reverse osmosis or "RO filter." Reverse osmosis systems use a process that reverses the flow of water in a natural process of osmosis so that water passes from a more concentrated solution to a more diluted solution through a semi-permeable membrane. Pre- and post-filters are often incorporated along with the reverse osmosis membrane itself. A reverse osmosis filter has a pore size of approximately 0.0001 micron. These systems are highly effective in removing protozoa (for example, cryptosporidium and giardia) and bacteria (such as campylobacter, salmonella, shigella, and e. coli). They are also great at removing viruses (for example, enteric, hepatitis A, norovirus, and rotavirus). Additionally, RO systems will remove common chemical contaminants (metal ions, aqueous salts), including sodium, chloride, copper, chromium, and lead; and may reduce arsenic, fluoride, radium, sulfate, calcium, magnesium, potassium, nitrate, and phosphorous.

Those are a lot of technical names. Have no fear, our disinfection rates are good so the chances of you ever seeing any protozoa or bacteria are very slight. Elbert Creek Water Company does currently meet CDPHE's compliance so if you are happy with your water, that is ok. If you would like to push it just a little further and a RO system meets your budget, then you might consider one. There are plenty of companies out there to choose from. Most local plumbers can install them or at least get you pointed in the right direction. Customers that have gotten them have had good results. They do have filters that will require maintenance, so be prepared for that expense. If you have a RO system on your house and it has worked well for you, we would love to hear about it!

I have included a link to the CDC website for home water filtration systems. It contains good information if you're interested in learning more:

https://www.cdc.gov/healthywater/pdf/drinking/Household_Water_Treatment.pdf

Thank you,
Sean Young

Drought, Paleoclimatology, and Using Tree Rings to Interpret Streamflow

As residents of Colorado, we often hear the term “drought” in relation to the history and climate of our state. Merriam-Webster defines drought as “a period of dryness, especially when prolonged,” and especially as “one that causes extensive damage to crops or prevents their successful growth,” (1). As of last week (June 21-27, 2020), Colorado’s current drought conditions are classified as extreme to exceptional, with La Plata County itself falling into the severe to extreme drought categories (2). These classifications indicate crop and pasture loss and common water shortages, and suggest the imposition of water restrictions. Scarily, as we have already experienced this year with the East Canyon Fire (among others), drought conditions often exacerbate wildfires, having the potential to prolong them and allow them to become more wide-spread.

How do we understand drought, in order to prepare for it? According to drought.gov, paleoclimatology is a great tool. “One of the limits of climatology is that we only have about a hundred years of scientifically gathered weather data, and we know that they don’t give us the full story. Paleoclimatologists find ways to figure out what the weather was like before we had thermometers, rain gauges, and written records. The natural world has recorded its own stories in tree rings, lake sediments, ice, cave deposits, and fossils, and paleoclimatologists can put that information together to assemble thousands of years of climate history. The findings of paleoclimatology show that past droughts have been more severe and have lasted even longer than the Dust Bowl in the 1930s or drought in the 1950s – by centuries, in some cases. Paleoclimatology helps us understand the full range of natural variability,” (3).

Drought, Paleoclimatology, and Using Tree Rings to Interpret Streamflow (continued)

How are tree rings used to determine information about past or future droughts? While not an exact science, tree ring reconstructions can be considered “a surrogate for experience,” which means they can demonstrate details of hydrologic variability from before climatologists began actively observing and recording information about streamflow (4). According to Jeff Lukas of the University of Colorado and Connie Woodhouse of the University of Arizona, using tree ring data in this way allows “…a longer window onto past hydrologic variability…for improved assessment of risk, particularly the risk of severe and sustained drought,” (5). This can help water managers better predict future instances of drought, which can allow communities to prepare for dry conditions more effectively.

For more information on these topics, visit:
-www.treeflow.info
-www.drought.gov
-www.earthobservatory.nasa.gov (search for “paleoclimatology”)

Works cited:

(1) Merriam-Webster. (2020). *Drought*. https://www.merriam-webster.com/dictionary/drought
(2) National Integrated Drought Information System. (2020, June 23). *Advancing Drought Science and Preparedness across the Nation.* https://www.drought.gov/drought/
(3) National Integrated Drought Information System. (no date). *Paleoclimate.* https://www.drought.gov/drought/data-maps-tools/paleoclimate
(4), (5) Lukas, Jeff and Woodhouse, Connie. (2010, June). *Tree-Ring Reconstructions of Streamflow and Climate and Their Application to Water Management.* [PowerPoint slides 7 and 9]. https://www.treeflow.info/background