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KENTUCKY WELL DRILLERS QUARTERLY

THE IMPORTANCE OF WELL MAINTENANCE AND DISINFECTION

Authored by: Kurtis Spears

Most Kentuckians have access to clean water through their local municipality or water company. These public drinking water suppliers are required to treat the water for their customers to ensure that it is safe to drink. For those who either do not have access to public drinking water or choose not to use it, domestic water wells are often the most viable source of drinking water available. Unlike those who are connected to a public water supply, private well owners are responsible for the maintenance and upkeep of their water supply. Private well owners in the state encounter a myriad of water quality issues that can affect anything from the smell, taste, and color of their well water. These issues can either be chemical or bacteriological in nature and can often be difficult to resolve. However, through routine maintenance and disinfection, these issues can be prevented or mitigated.

One of the most common water quality issues related to private wells is bacteriological growth, in particular E. coli. E. Coli or fecal coliform is a harmful bacterium that is present within the intestines and excrement of most mammals. If ingested E. Coli can cause discomfort, nausea, stomach cramps, and vomiting. Water wells and plumbing infrastructure (i.e. water pipes, well pumps, sinks, etc.) can provide an ideal environment for fecal coliform bacteria to flourish. Other bacteria to be concerned with include Iron-Reducing Bacteria (IRB), Sulphate-Reducing Bacteria (SRB), and SLYME bacteria. These nuisance bacteria affect mainly the color, taste, and odor of well water, but can cause some digestive discomfort. The primary method of treating for E. Coli and other nuisance bacteria is shock chlorination. Shock chlorination is a treatment method that involves pouring bleach (unscented) or hypochlorite tablets into the well. The well is then purged (this includes all indoor and outdoor spigots, and faucets) until the bleach can be smelled. The bleached water is then reintroduced or recirculated back into the water well, this step is necessary to kill of any remaining bacteria that are still living within the casing. Once recirculation is complete, purge the well again until the bleach smell dissipates. Shock chlorination is useful in eliminating harmful bacteria, but must be performed regularly in order to maximize its effectiveness More information on shock chlorination can be found in the Water Well Maintenance Guide.

Well owners can also install a filtration or water treatment system on their well. Unlike shock chlorination, which are one time treatment events, treatment systems continuously treat and filter well water. Water treatment systems can address water quality issues including metals, herbicides, pesticides, hardness, and nuisance bacteria. It's recommended to reach out to a water treatment company or specialist before installing a filtration system on a water well.

Whether you choose to regularly shock chlorinate your well or install a treatment system, routine treatment and maintenance goes a long way in ensuring safe drinking water as well as extend the life of water well. For more information on water well maintenance, please contact the Groundwater Section.

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IMPORTANCE OF WELL LOGS

Authored by: Zach Campbell

WHY ARE WELL LOGS IMPORTANT?

Completed and accurate well logs provide a clear record of activities that occurred during the construction of that particular well. Well logs are that are added to the state database are available to the public. These logs, when accurate, provide great information to the public on good and bad water producing and quality zones. This can help with development in specific areas where the status of good available water is unknown.

WHAT INFORMATION IS IMPORTANT?

A complete well log provides more accurate information to the state and the owner of the well. Information such as accurate coordinates allows the Division of Water to accurately locate the well on maps and dashboards that can be accessed by the public. Accurate construction details can provide crucial information on understanding issues that might be impairing a well, as well as aquifer information.

WHY IS THE DATA SO IMPORTANT?

With almost forty years of data at this point, accurate information filled out in the logs can help improve the overall usage and quality of water in Kentucky! In increasing areas of population water availability and quality becomes crucial for development. The Division of Water is always willing to help with any questions or concerns on how to fill out well logs.

WHAT IS THE NEED FOR THE AKGWA TAGS?

AKGWA numbers are designed to provide information on the intended use for the well, whether it is for a monitoring well or water well. Properly labeled wells allow for quick reference for the owners to access information about their well, that includes construction and potential water quality information. If you need more AKGWA tags to label wells, you can contact Tim Collins at tim.collins@ky.gov and tags will be sent to you in the mail.

DID YOU KNOW?

- Kentucky has one of the most extensive Karst regions in the US, covering nearly 55% of the state.

- Karst systems include caves, sinkholes, and underground streams, making groundwater highly interconnected, but also more vulnerable to contamination.

- Vulnerable karst regions are at higher risk of contamination due to their permeability.

- Droughts can lower recharge rates, while extreme precipitation may exacerbate contamination risks.

- Proper construction and abandonment of wells is key to ensuring contaminants don't reach vital water resources.

- Early Kentucky settlers started drilling water wells in the 1800s.

EMAILS AND QUICK LINKS

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Quick Links

Water Well Drillers Certification:

https://apps.legislature.ky.gov/law/kar/titles/401/006/320/

Monitoring Well Construction:

https://apps.legislature.ky.gov/law/kar/titles/401/006/350/

Well Owner's Guide:

https://eec.ky.gov/Environmental-Protection/Water/Reports/Reports/2009-WaterWellOwnersGuide.pdf

Water Supply Well Construction:

https://apps.legislature.ky.gov/law/kar/titles/401/006/310/

Well Driller Certification Program:

https://eec.ky.gov/Environmental-Protection/Water/GW/Pages/GWDrillers.aspx

Well Record Information Map:

https://kygis.maps.arcgis.com/apps/webappviewer/index.html?id=3f4828d60d32429fa01215e2425d6e82

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