

Adams County Health Department Water Program Overview

Brian Mead
Water Quality Program Supervisor



Water Quality



Water is a limited and valuable resource



Hoover Dam – Colorado River



97% of the world's water is unsafe to drink



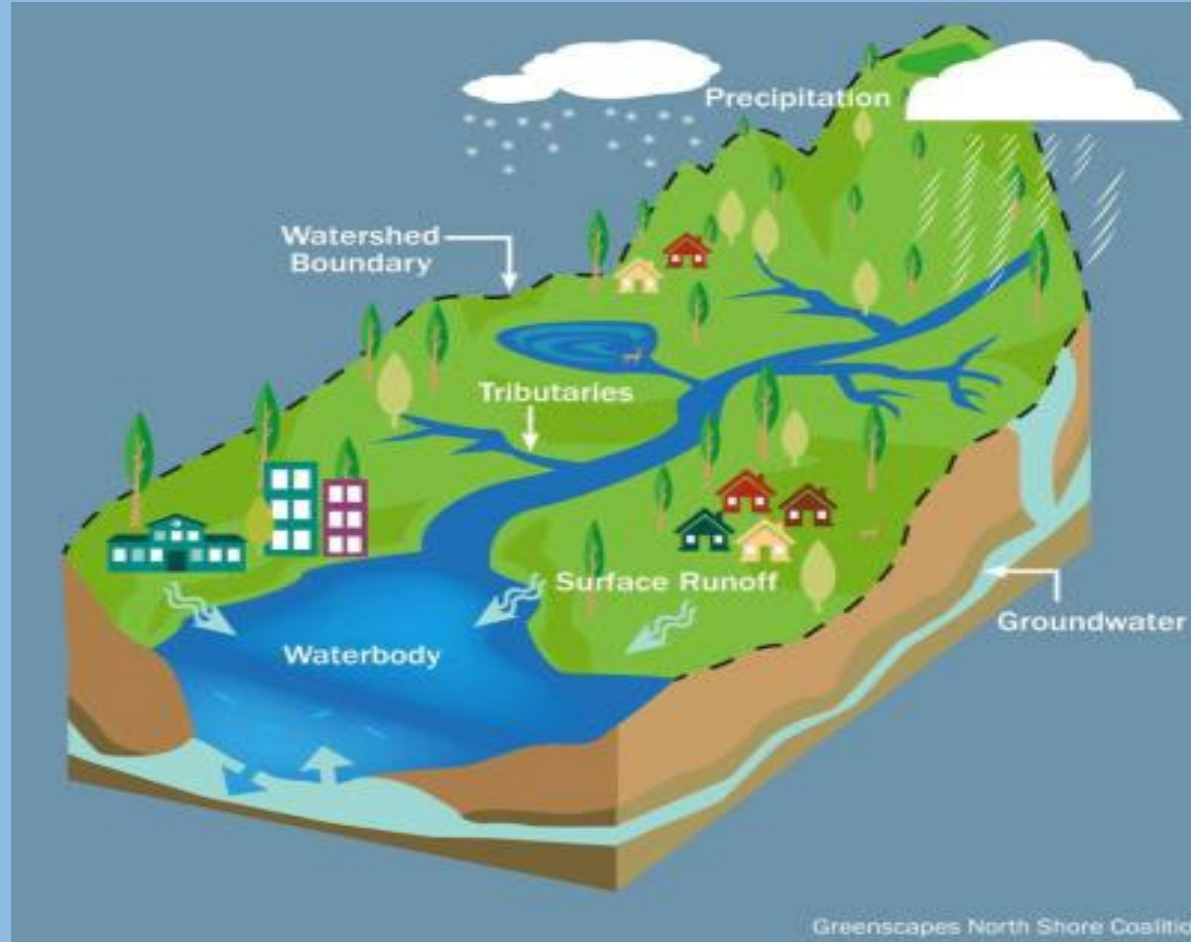
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Watershed Health

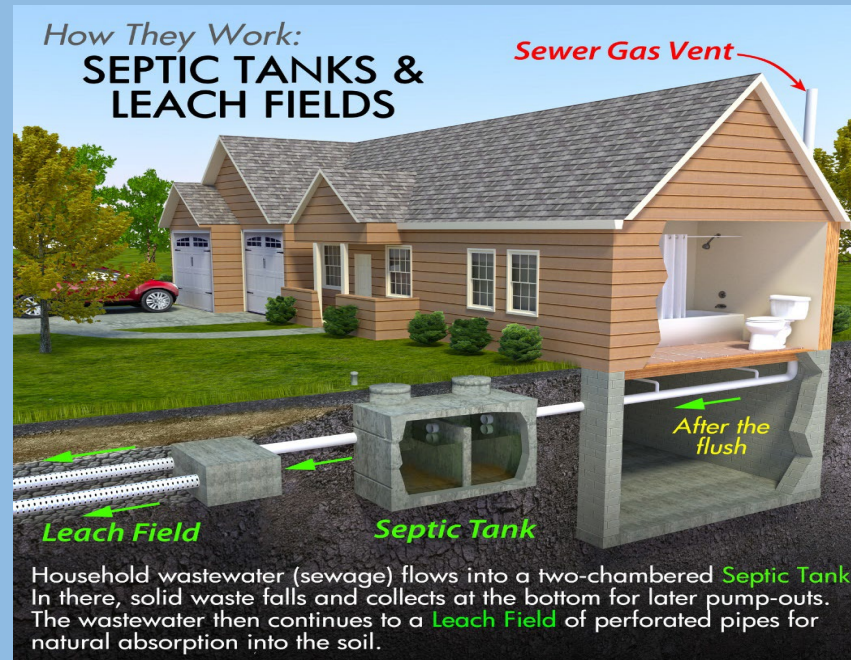
ACHD protects watershed health by:

- ❖ Monitoring Stormwater runoff – work w/ cities and county
- ❖ Spills Response – ACHD responds to all reports of spills to water. After hours team 24/7
- ❖ Coordinating with CDPHE on sampling and emerging contaminants
- ❖ Permitting and inspecting all new and repaired septic systems



Onsite Wastewater Treatment Systems

- ❖ OWTS treat small wastewater flows, usually from individual homes or businesses. They are typically used in rural or large lot settings when centralized wastewater treatment is impractical. Most OWTS have two parts: a septic tank and a soil treatment area.
- ❖ Regulation O-22 approved by BOH in October 2022 and adapting well
- ❖ ACHD permits and inspects all new OWTS and minor/major repairs to existing systems
- ❖ ACHD requires an inspection and correction of deficiencies to be conducted when a house: transfers title, adds bedrooms, changes use, or adds a modular structure



Recreational and Public Water Pools, Spas, Spray Pads

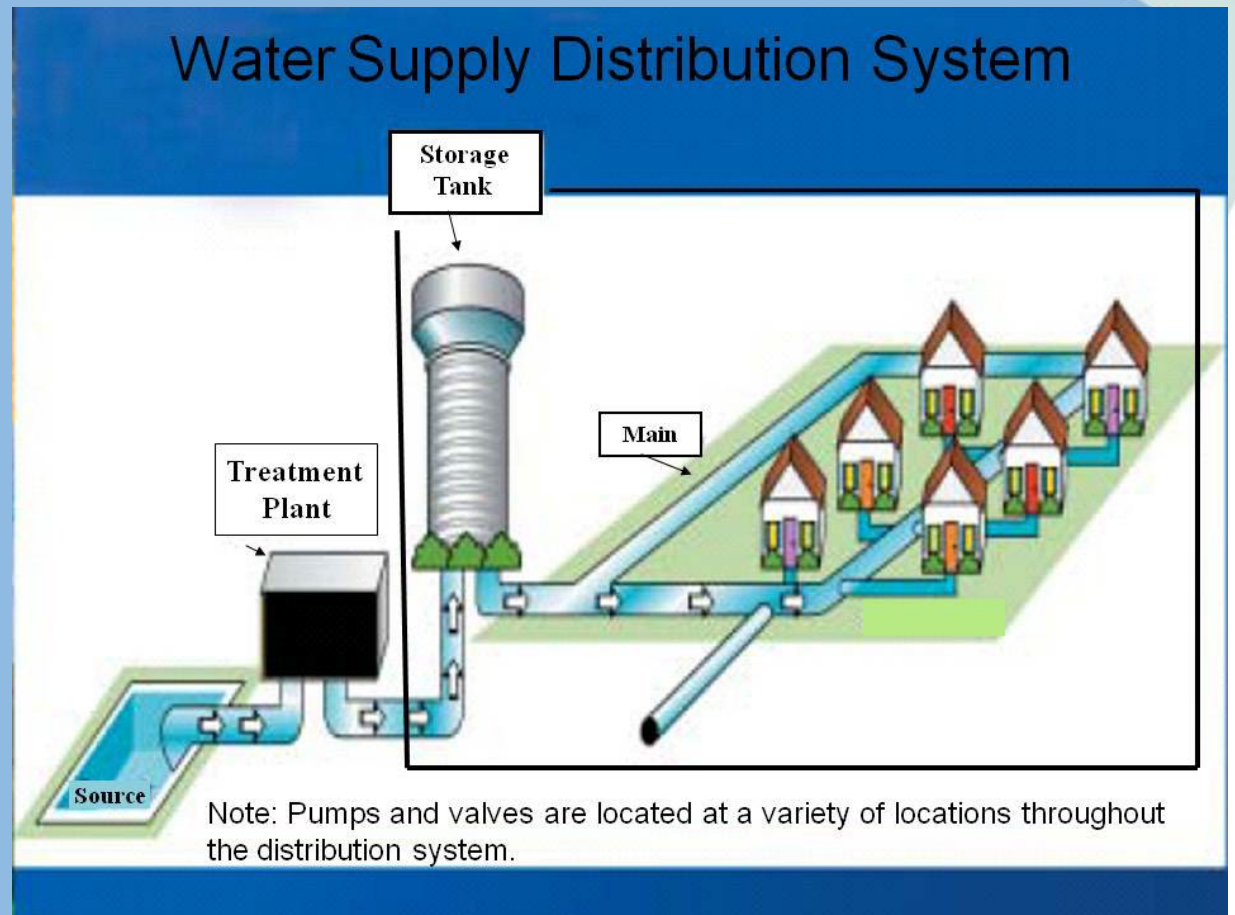
- ❖ Inspections at public and semi public pools and spas twice per year.
- ❖ Respond to complaints regarding illness and water quality
- ❖ Check chemicals (pH, Disinfectant, Alkalinity, Turbidity, Calcium Hardness, Turnover Rate, etc.)
- ❖ Inspect pool facility, water pump and circulation equipment, and chemical storage



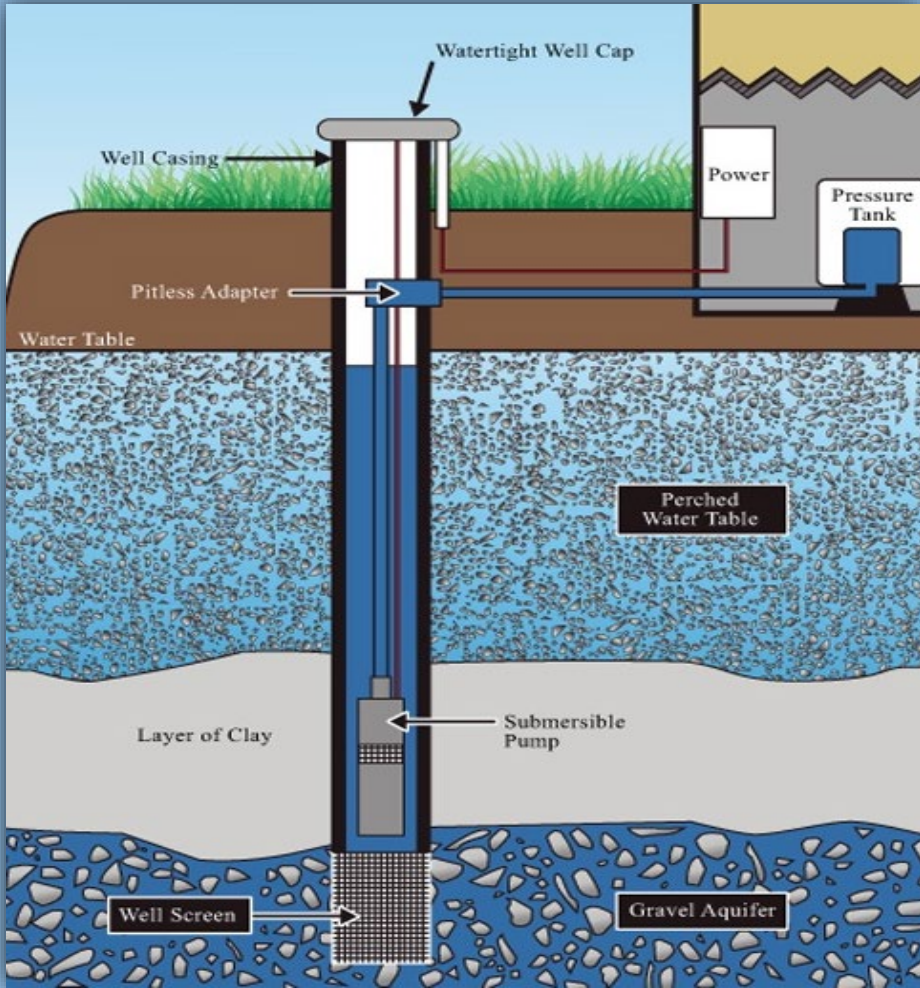
Public Water Systems

Definition of Public Water System:

- ❖ Water supplied for human consumption to at least 25 people or the system has 15 or more connections.
- ❖ Public water systems supply water to 90% of the nation's population
- ❖ All Public Water Systems are regulated by CDPHE Water Quality Control Division, and have a Public Water System ID Number (PWSID).
- ❖ Public Water Systems are inspected by CDPHE. ACHD receives reports of deficiencies for these systems and may assist in gaining compliance
- ❖ If there are water quality problems with a PUBLIC water system, it is the supplier's responsibility to correct the problem and provide safe drinking water.



Private Wells



- ❖ No federal or state regulations for testing private wells
- ❖ Owners are responsible for the safety of their well water
- ❖ Some mortgage lending companies require a bacteriological sample of the well water prior to closing
- ❖ ACHD educates homeowners on well protection, testing, disinfection, and water conservation
- ❖ Laboratory tests for *Coliform* bacteria cost under \$30.00

The Colorado Department of Public Health and Environment's (CDPHE) Laboratory Services Division.

<https://www.colorado.gov/pacific/cdphe/water-testing>

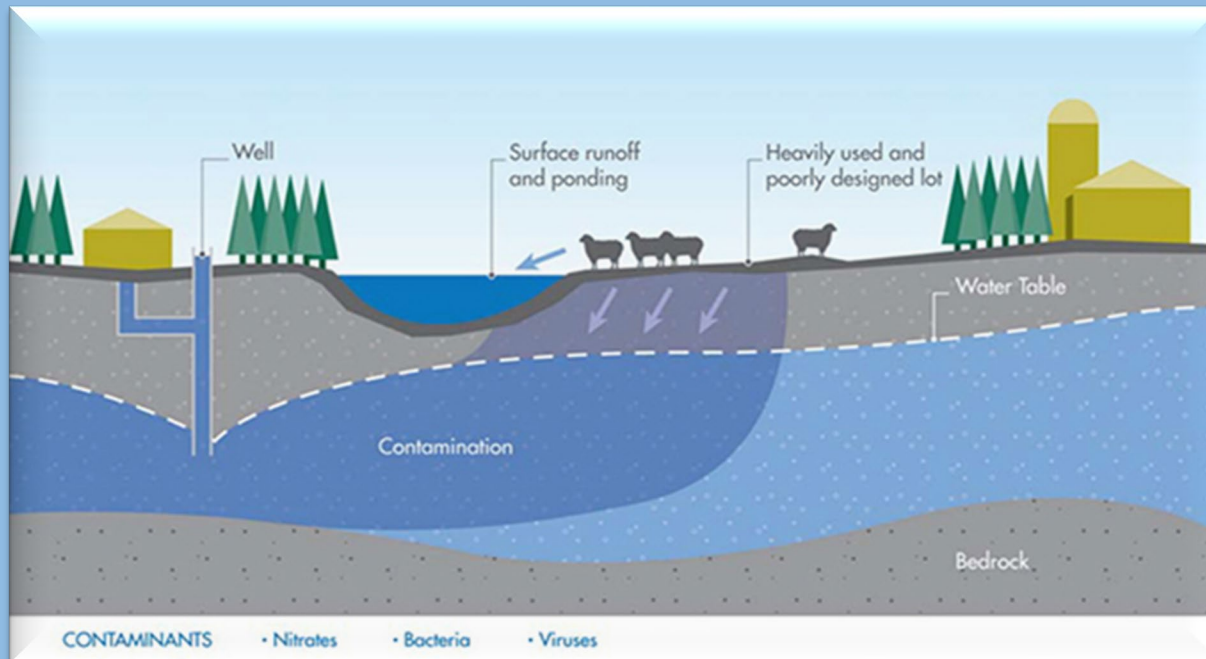


Protecting Your Well

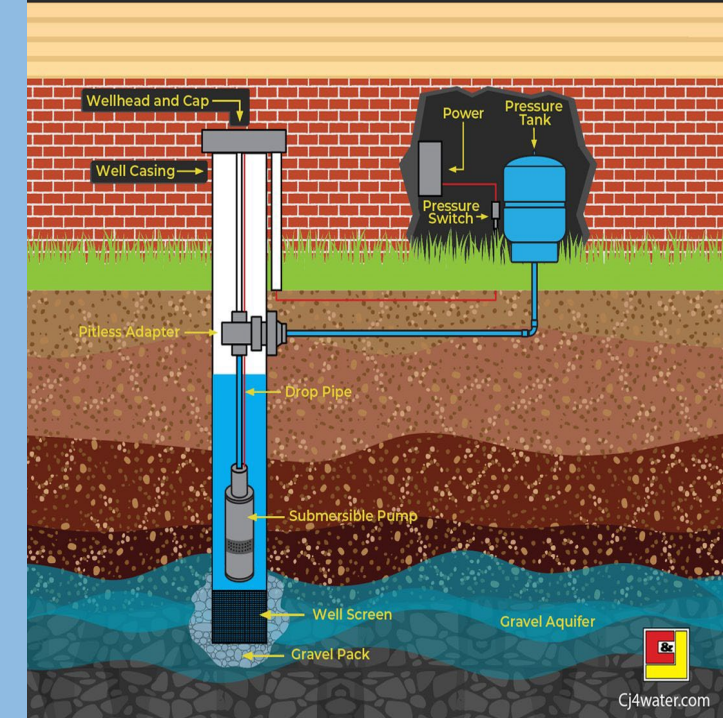
Identify potential sources of contamination:

- ❖ Agricultural chemicals – pesticides and fertilizers
- ❖ Animal wastes
- ❖ Septic systems
- ❖ Fuels – storage
- ❖ Household lawn and garden chemicals
- ❖ Underground storage tanks

➤ Monitoring for contaminants – ACHD recommends testing private wells annually



Anatomy of a Water Well



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PFAS (Polyfluoroalkyl Substances)

- ❖ PFAS refers to a broad class of manmade chemicals that are widely used in a variety of products and highly persistent in the environment - “Forever Chemicals”.
- ❖ PFAS do not break down or degrade over time
- ❖ One of the main sources of PFAS contamination of groundwater is firefighting foam.
- ❖ PFAS health advisories and maximum contaminant levels are ever evolving as we learn more about their effects on humans and labs become more able to detect to the ppb level



Health Risks

- ❖ **Strong** evidence that PFOA and PFOS:
 - Impact the immune system
 - Increase cholesterol
 - Decrease infant birth weight
 - Cause changes in liver function
- ❖ **Moderate** evidence that PFAS are associated with:
 - Preeclampsia and high blood pressure during pregnancy
 - Effects on thyroid hormones
- ❖ **Also evidence** that PFAS increases risk of kidney and testicular cancer. Children ages 0-5, people who are pregnant or breastfeeding more susceptible to health effects

Scientific Studies Suggest Some PFAS May Increase Risks of:

Altered Liver Function	Decreased Birth Weight	Decreased Vaccine Response
Increased Blood Pressure	Increased Cholesterol	Kidney Cancer
Reproductive Problems	Testicular Cancer	

Source: Federal and State Health Agencies

Bloomberg Law



2021 Sampling

- ❖ TCHD and CDPHE - PFAS sampling pilot
- ❖ TCHD sampled 10 wells between Sept 28, 2021 and Oct 21, 2021.
- ❖ All homeowners received the laboratory results for their wells along with information about how to interpret the results.
- ❖ None of the homes had PFAS levels 70 ppt, which was the EPA health advisory at the time.*
- ❖ 9 of 10 were non-detect for all PFAS analytes.
- ❖ 1 home had detects for 2 of the PFAS compounds, PFHxA = 11.5 ppt, PFPeA = 16.6 ppt.



Private Well Sampling – Residents Near Oil and Gas Sites 2018

Objective:

- ❖ Adams County residents who are served by private water wells—and meet eligibility criteria—had the opportunity to have their drinking water analyzed for 76 water quality parameters at no cost for this service.
 - ❖ *1) The well must be located west of Imboden Road in unincorporated Adams County.*
 - ❖ *2) The well must be located within one-half mile from an existing oil and gas well.*
- ❖ This was a one-year pilot program offered by Adams County in conjunction with Tri-County Health Department that was extended through 2021
- ❖ Water samples are analyzed for 59 Volatile Organic Compounds and 17 basic water quality parameters including metals, inorganic ions, pH, and uranium

Results:

- ❖ VOCs were not been detected in any of the 41 wells
- ❖ Two wells have multiple parameters that were of concern including selenium, uranium and nitrate that exceeded EPA health-based standards
- ❖ One well had fluoride levels above EPA's health-based standards
- ❖ All wells had elevated levels of sodium; above EPA's recommended level for persons on heart-healthy diets
- ❖ 22 wells had Total Dissolved Solids (TDS) levels above EPA's secondary standard of 500 parts per million
- ❖ All homeowners were provided with information specific to their test results



Spills and Hazardous Releases

Spill Response:

- ❖ The Water Team responds to all reports of spills of hazardous substances to the surface of the ground to ensure proper clean-up and remediation.
- ❖ ACHD After Hours Response team made up of 7 team members who rotate on-call to provide assistance 24/7 365 days per year in order to protect the community

Storm Water:

- ❖ Untreated water from precipitation runoff that enters a storm drain and flows to retention pond, stream, lake, river, or ocean.
- ❖ ACHD works with local Storm Water Authorities to clean/disinfect the area and notify downstream users



2023 Water Team Major Response Efforts

- ❖ Several restaurant grease trap overflows in partnership with Stormwater districts
- ❖ Greenbriar Apartments water and sewer line break with pressure loss
- ❖ Sheen on Burlington Ditch near Riverside Cemetery
- ❖ Oil spill into Clear Creek near 64th and Pecos
- ❖ 2 failing septic system responses
- ❖ Semi rollover in Brighton carrying weed killer
- ❖ 7 mobile home park sewage overflows in coordination with City of Thornton Stormwater



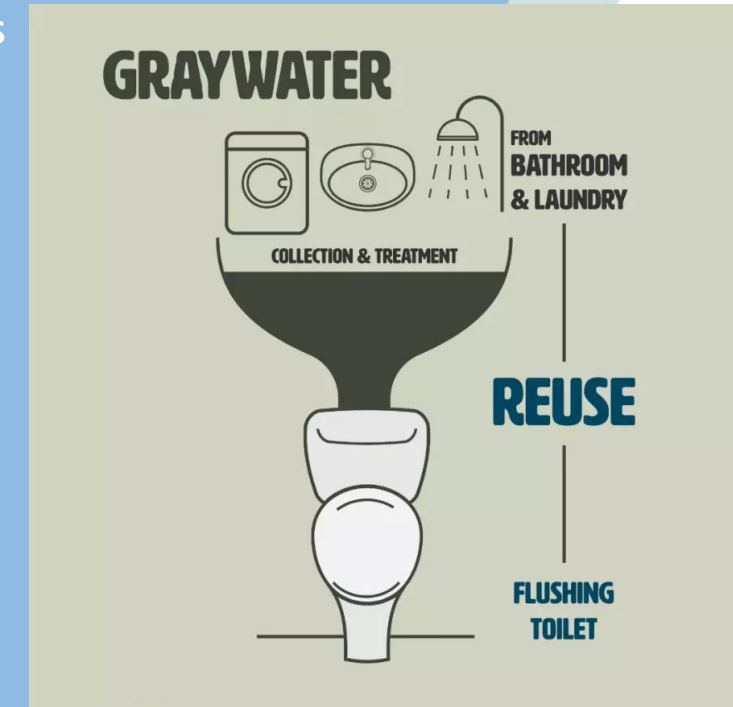
Looking To The Future

Graywater:

- ❖ Exploring future greywater use in new construction*
- ❖ Requires approval and collaboration from building departments and plumbing code modification
- ❖ Aligns with ACHD goal of reducing water usage and preserving natural resources

Water Quality Specialist:

- ❖ Currently in the interview stage for this position
- ❖ Roles Will Include:
 - ❖ Coordination on waterborne disease investigations
 - ❖ Participation on local water boards and stormwater protection districts
 - ❖ Follow up with CDPHE on public water system violation notices and investigations
 - ❖ PFAS and emerging contaminate tracking
 - ❖ Work with facilities who experience pressure loss events
 - ❖ Regulation 11 (Lead & Copper) and Regulation 86 (Graywater)
 - ❖ Track and apply for applicable grant funding related to watershed protection and sampling as needed



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