PWS Sample Trouble-Shooting Guide

	Issue Observed	General Information	Recommended Action Step	Health Effects/Significance
☐	Total coliform levels were detected in your water sample exceeding the maximum contaminant level.	Total coliforms are bacteria that are naturally present in the environment, found in soil, in water that has been influenced by surface water, and in human or animal waste. Their presence is used as an indicator that other, potentially-harmful, bacteria may be present.	Prior to providing treatment options, the source of fecal coliform or E. coli contamination should be determined and the cause of the contamination removed. Once the contamination has been eliminated as a threat to the water supply, disinfection of the private water system should be performed and the water re-sampled. It is recommended that the water from a private water system be tested for total coliforms and E. coli annually in order to determine the need for maintenance, repair, or replacement.	Short terms symptoms that may be caused by pathogens indicated by total coliforms are diarrhea, cramps, nausea and headaches. -See **Total and Fecal Coliform Bacteria** Handout in folder. -See appropriate system **Disinfection Instructions** and **Automatic Calculator** on ODH website (On reverse side).
☐	*E. coli* was detected in your water sample.	One of hundreds of strains of the bacterium *Escherichia coli*, *E. coli* O157:H7 is an emerging cause of food-borne and water-borne illness. Most strains of *E. coli* are harmless and live in the intestines of healthy humans and animals and consequently, provide an excellent indicator of fecal contamination.	The source of *E.coli* contamination should be determined and the cause of the contamination removed. Once the contamination has been eliminated from the water supply, disinfection of the private water system should be performed and the water re-sampled. It is recommended that the water from a private water system be tested for total coliforms and *E. coli* annually in order to determine the need for maintenance, repair, or replacement. When the presence of *E. coli* is recurrent, it is recommended that the cause of the contamination be removed or the PWS be repaired/replaced before the use of a continuous disinfection device be considered. Connecting to a public water supply, if available, may be necessary.	E.coli Infection can cause severe diarrhea that may be bloody, and abdominal cramps. Frequently, no fever is present. It should be noted that these symptoms are common to a variety of diseases, and may be caused by sources other than contaminated drinking water. -See **E. coli** Handout in folder. -See appropriate system **Disinfection Instructions** and **Automatic Calculator** on ODH website (On reverse side).
☐	Nitrate levels were detected in your water sample.	Nitrates (NO_3) in drinking water usually originates from fertilizers or from animal or human wastes. Nitrate concentrations in water tend to be highest in areas of intensive agriculture or where there is a high density of septic systems.	Treatment options may include Reverse Osmosis systems and Ion exchange systems. Contact a private water contractor to discuss your options.	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. -See **Nitrates and Nitrites** Handout in folder.

Private Water System (PWS) Trouble-Shooting Guide

	Issue Observed	Possible Causes	Significance & Explanation	Recommended Action Step
☐	**Damaged Well Casing**	• Rust • Impact From Car, Lawnmower, or Other Equipment	The water well casing prevents the well from collapsing and provides a sealed pathway for the water to flow from the bottom of the well to the top. It prevents contaminants such as sediments, dirt, and bacteria from entering the water supply.	Contact a Private Water Contractor and have the casing inspected to determine if repairs are possible.
☐	**Damaged or Missing Well Caps/Lids Over the PWS or improper vermin screens.**	• Rust • Impact From Car, Lawnmower, or Other Equipment	Well casings are covered with plastic or aluminum caps, while older, hand-dug wells are capped with large concrete lids. These caps and lids prevent insects, dirt, dust, and small animals from falling into the water supply that could contaminate the well water with harmful bacteria. Well caps also have vents that help control water pressure during pumping.	Contact a Private Water Contractor and have the cap or lid replaced.
☐	**Continuous Disinfection Devices Not Functioning**	• UV Bulb Broken/ Burned Out • Chlorine Tablets/ solution Need Replaced • Equipment Malfunction	Some factors, such as the depth to the water source, may make certain PWS prone to surface contamination. These PWS may require continuous disinfection to eliminate total coliforms and *E. coli.* If/when these disinfection devices fail, the water supply may become unsafe for drinking.	Contact a Private Water Contractor to inspect and repair or replace these devices. These devices all require ongoing maintenance. -See **Continuous Disinfection** Handout
☐	**Unknown well location**	• Buried casing • No drawing/ well log on file	It is difficult, if not impossible, to properly maintain/disinfect a water source that cannot be accessed. If/when problems arise, the root cause cannot be identified to determine action steps.	Contact a Private Water Contractor to find, inspect, and possibly extend the well casing above grade.

-Annual Sampling is recommended as well as "shock" disinfection of wells up to twice a year.

-Private Water Systems Contractors can be found by searching "ODH Private Water Systems Contractors"

-Well Log for your PWS can be found by visiting https://apps.ohiodnr.gov/water/maptechs/wellogs/app/

Other Educational Resources:

Ohio Department of Health	US EPA	Centers for Disease Control	Non-Governmental Sites
odh.ohio.gov (under Private Water Systems Program)	https://www.epa.gov/privatewells	cdc.gov/healthywater/drinking/private/wells/	privatewellclass.org wellowner.org

Lake County General Health District

Public Health

Prevent. Promote. Protect.

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