Kalamazoo County Health & Community Services

Understanding Drinking Water Results

BACTERIOLOGICAL ANALYSIS

Evaluation of the bacteriological quality of drinking water is done by testing for coliform bacteria. Coliform are found in the intestinal tract of warm-blooded animals, surface water, some soils, and decaying vegetation and are used as "indicator" organisms. If the result on your report is "NOT DETECTED", no coliform organisms, including *E. coli*, were detected in your water sample. If they are present as indicated by a "DETECTED" result on your report, pathogenic or disease causing organisms could be present. A detected (or positive) result may indicate that a water supply is not properly protected from contamination. The test also assesses the presence of *E. coli*, an organism that always originates from mammal or bird intestinal tracts. If *E. coli* is detected, it is more likely that the water supply may contain disease-causing organisms resulting from fecal contamination.

PARTIAL CHEMICAL ANALYSIS

The Kalamazoo County HCS Laboratory analyzes eight commonly requested parameters in a routine procedure called a "partial chemical analysis." Below are two tables of these parameters and associated problems. Table 1 lists three parameters where federal and state agencies have established drinking water health advisory levels for public water supplies. Parameters listed in Table 2 are associated with aesthetic water quality problems. "ND" means not detected. *Test results are reported in milligrams per liter (mg/L) equivalent to parts per million.*

*See DEQ pamphlet EQC2033 "Nitrate in Drinking Water" 2/00

TABLE 1

Test	Good	Satisfactory	Caution	Risk
Nitrate as Nitrogen	<0.05 to 3	4 to 10	Over 10	Methemoglobinemia* (blue baby syndrome) especially infants
Nitrite as Nitrogen	<0.05 to 0.3	0.4 to 1	Over 1	Methemoglobinemia* (blue baby syndrome) especially infants
Fluoride	0.7 to 1.2**	ND to 0.7 or 1.2 to 4	Over 4	Low levels are beneficial in preventing tooth decay. High levels may cause mottling of enamel.

**Optimal range of fluoride concentration per American Dental Association

TABLE 2

Test	Good	Satisfactory	Caution	Problem
Chloride	<0.5 to 20	20 to 250	Over 250	Taste, corrosion
Hardness	50 to 125	125 to 250	Over 250	Scaling of water fixtures, soap scum at high levels, corrosion at low levels. Water treatment equipment may be needed.
Iron	<0.1 to 0.2	0.2 to 0.3	Over 0.3	Staining, turbidity, taste, odor. Water treatment equipment may be needed.
Sodium	<3.0 to 20	Special diets may require water of low sodium content. Persons on severely restricted sodium diets should consult with their physician regarding continued use of the water supply. Acceptability of sodium concentration varies with sensitivity to taste.		
Sulfate	<1.0 to 50	50 to 250	Over 250 Over 500	Taste, odor, scaling in boilers & heat exchangers May have laxative effect, especially for new supply users (traveler's diarrhea)

SAMPLING FREQUENCY

All drinking water wells should be tested for coliform bacteria and nitrates at least annually or if a change in color, taste, or odor is discovered. Unless your water well is properly designed, constructed, and maintained, a test result conforming to state standards may give you a false sense of security. A defective well can produce intermittent satisfactory bacteriological tests, but its continued safety cannot be assured. While coliform bacteria and partial chemical testing are good screening tools, they do not detect petroleum products, industrial solvents, heavy metals, herbicides and pesticides. Additional testing may be more appropriate for your water supply. The Environmental Health Division may be able to assist you in determining additional testing parameters.

For more information, call the Environmental Health Division at (269) 373-5337 or visit on line at www.kalcounty.com/eh/safe-drinking-water.htm