

# WATER ANALYSES INTERPRETATION

(based on the USGS, Federal & State EPA Guidelines for Drinking Water)

## **pH**

Normal range: 6.5 to 8.5

Generally waters having a pH below 6.5 are acidic and above 7.5 is alkaline. The pH of drinking water, in itself, has no effect on health. Corrosion has been associated with low pH, water may have a sour taste if less than 4.0. If pH exceeds 8.5, water may have an alkali taste and scale may form in pipes.

## **CHLORIDE**

Less than 250 mg/L: Satisfactory  
250 mg/L or greater: Satisfactory w/notation

Chlorides in normal ground waters fall in the 1 to 2 mg/L range, and in reasonable concentration are not harmful to humans. Concentrations of 250 mg/L and above give a salty taste to water and could cause corrosion of pipes and plumbing fixtures. Elevated chlorides may result from saltwater intrusion or road salt contamination of the well water.

## **HARDNESS (as calcium carbonate)**

Less than 60 mg/L: Soft  
61-120 mg/L: Moderately Hard  
121-180 mg/L: Hard  
180 mg/L or greater: Very Hard

Hard waters are as satisfactory for human consumption as soft. Because of adverse action with soap, and a tendency to produce scale in hot water pipes, heaters, etc., it may be desirable to install a water softener.

## **NITRATE (as nitrogen)**

Less than 6 mg/L: Satisfactory  
6.0-9.9 mg/L: Satisfactory w/notation  
10 mg/L or greater: Unsatisfactory

## **NITRITE (as nitrogen)**

Less than 1 mg/L: Satisfactory  
1 mg/L or greater: Unsatisfactory

Nitrates may be naturally occurring compounds during the decay of organic or plant material. Elevated concentrations may originate from fertilized fields, manure piles, or from septic contamination.

Nitrates in high concentration cause methemoglobinemia or so-called nitrate poisoning in infants. Supplies with 10 or more mg/L are judged unsatisfactory and are not considered safe for drinking or cooking.

## **COPPER**

Less than 0.5 mg/L: Satisfactory  
0.5-1.2 mg/L: Satisfactory w/notation  
1.3 mg/L or greater: Unsatisfactory

Copper is an essential element in human metabolism and does not constitute a health hazard, but does impart an undesirable taste to water when present in concentrations above 1 mg/L. At concentrations above 1.3 mg/L, intestinal distress may result.

## **LEAD**

Less than 10 ug/L: Satisfactory  
10 – 14.99 ug/L: May be Unsatisfactory\*  
15 ug/L or greater: Unsatisfactory

Lead in high concentration can cause kidney and nervous system damage.

\*The Maine State Maximum Exposure Guideline (MEG) is set at 0.01 mg/L for Lead in drinking water. This guideline for drinking water set by the State suggests that anything over the MEG is considered to be potentially harmful to human health. Questions regarding Lead or any other drinking water contaminants should be directed to the Maine State Toxicologists at 1-866-292-3474 (toll free for in-state calls only) or 207-287-4311.

## **IRON**

Less than 0.3 mg/L: Satisfactory  
0.3 mg/L or greater: Satisfactory w/notation

## **MANGANESE**

Less than 0.05 mg/L: Satisfactory  
0.05 mg/L or greater: Satisfactory w/notation

Both Iron & Manganese are highly objectionable constituents in water, supplies. These metals impart a brownish color to laundered goods and can appreciably affect the taste of water. Manganese only in concentrations, above 0.05 mg/L, parkinsonian type symptoms may occur. Iron only over 5.0 mg/L could potentially cause health issues.

## **COLIFORM BACTERIA**

0/100 ml: Satisfactory  
1/100 ml or greater: Unsatisfactory

The coliforms are a diverse group of bacteria that are present in solids, plant matter, and occur as normal intestinal microorganisms of humans and animals. A member of this group, E. coli, may be associated with septic contamination of groundwater or fecal contamination of surface runoff.

While the coliform bacteria are not themselves dangerous, they are an indicator of potential contaminants that could cause illness.

## **ARSENIC**

Less than 10 ug/L: Satisfactory  
10.0 ug/L or greater: Unsatisfactory

Arsenic in high concentrations is carcinogenic and can cause liver and kidney damage.

## **SODIUM**

Less than 20 mg/L: Satisfactory  
20 mg/L or greater: Satisfactory w/notation

Persons affected with certain diseases require water with a low sodium concentration (20 mg/L or less).

## **FLUORIDE**

Less than 2 mg/L: Satisfactory  
2.0 -3.99 mg/L: Satisfactory w/notation  
4.00 mg/L or greater: Unsatisfactory

Fluoride is helpful in dental health as above. However, excessive consumption of naturally occurring fluoride can damage bone tissue (dental fluorosis).

<0.2-0.29 mg/L – Show a very small amount of fluoride and are, not enough to prevent tooth decay.

0.3-0.7 mg/L – Show that some fluoride is present but it may not be enough to protect children's teeth.

0.7 mg/L or higher – Show a level of fluoride that is high enough to help protect children against tooth decay.

## **URANIUM**

Less than 20 ug/L: Satisfactory  
20-29 ug/L: Satisfactory w/notation  
30 ug/L or greater: Unsatisfactory

Uranium in high concentrations can harm kidneys and may cause cancer.