Water Analysis Information

About our analysis

We use industry standard methods of informational water analysis both in the field and in our lab. We analyze water to assist our customers in securing a useful water supply and to support our water treatment work. The tests performed and the way we report the results are tailored to these two goals. Certified analysis for other purposes such as regulatory compliance or litigation should be performed by a commercial laboratory.

Total Alkalinity

Total alkalinity is an indicator of the general character of well water. The values for total alkalinity can be useful when evaluating other water quality parameters. There is no recommended upper or lower limit.

Total Hardness

Hardness in water is the total of the calcium and magnesium. These metals cause numerous problems in water, primarily by reacting with soap or by creating limestone scale when water is heated. Hardness causes excessive soap consumption and causes a buildup of difficult-to-remove soap deposits on plumbing fixtures and in fabrics. In some cases when water containing hardness is heated the hardness may precipate as limestone scale, causing inefficiencies in the water heater as well as other problems. Hardness is shown here as grains per gallon (GPG). The degree of hardness in water can be determined by the following chart prepared by the US Geologic survey:

SOFT:	Less than 1 GPG
SLIGHTLY HARD:	1 to 3.5 GPG
MODERATELY HARD:	3.5 to 7. GPG
HARD:	7.0 to 10.5 GPG
VERY HARD:	Greater than 10.5 GPG

Iron and Manganese

Iron can occur in water in several forms. We report the total iron content. The recommended limit is 0.3 milligrams per liter, although levels slightly higher than this are not always objectionable. Iron can cause stains on plumbing fixtures, appliances, and laundry. It can plug pipelines, and cause unpleasant tastes and odors in water. Manganese is a metal similar in occurrence to iron. The recommended limit is 0.05 milligrams per liter. The problems caused by manganese are similar to iron except that the stains caused by manganese are brown or black. Both iron and manganese are aesthetic nuisances in water but are not of health concern.

pH

The pH scale is a measure of the relative balance between acid and basic properties of water. The pH scale runs from 0 to 14 with 7, in the middle, being considered neither acid nor basic or, in other words, neutral. Values less than 7 are increasingly acidic; values greater than 7 are increasingly basic. There is no specific recommended limit for pH but because this factor can play a major role in the corrosion of plumbing, water with a pH of less than 6.8 should be considered potentially corrosive.

Total Dissolved Solids

Total dissolved solids (TDS) is a measurement of the all the dissolved minerals in the water. The recommended limit for TDS is 500 mg/l based mainly on taste considerations rather than physiological effects. Depending on what minerals are present in the water to account for high TDS the recommended limit may in many cases be too low. Some water substantially above the recommended limit may be completely acceptable in some cases but not in others. Although there is no recommended lower limit it is important that TDS not be too low as very low TDS water is often corrosive. We usually consider TDS lower than 50 to 75 mg/l to be cause for further inquiry into possible corrosion.

Nitrate

Nitrate is a ground water pollutant of health significance. It is found in ground water due to excessive use of fertilizers, faulty septic systems, the existence of feed lots, or several other surface activities. Our analysis for nitrate is a brief screening test and if the presence of nitrate is shown we recommend a nitrate test by a commercial laboratory. According to public health experts, nitrate in drinking water at elevated levels is a hazard for infants but is not considered a hazard for adults. Not all researchers agree that nitrate is harmless to adults. Call us for current information.

Odor

If our analysis reports odor it is usually expressed as a description of what is causing the odor rather than a numerical result. In some cases we report sulfur odor as parts per million of hydrogen sulfide. On water samples tested at our office we usually do not report odor because it may not persist in a transported sample.

Appearance

As with odor, we report the appearance of water as a visual description rather than a numerical value. Iron or manganese may discolor a water sample before analysis, resulting in a report of discoloration or haziness even though the water was clear at the time of sampling.

For further information on water quality, water treatment, or a quotation for water quality improvement, please call us:

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