

Parameter	Units	US EPA Health Limit	US EPA Taste Threshold	WHO Allowable Value	Amount that Affects Taste	What it Measures	Reasons for measurement	Health Effects	What to do if the value is too high
Conductivity to measure Total Dissolved Solids (TDS)	µS/cm to ppm		500 ppm	(Multiply µS/cm by 0.67 to find ppm) 500 ppm	500 ppm	Total dissolved solids (TDS) looks at inorganic salts and organic matter present in solution in water.	Water with a high conductivity will corrode metal pipes.	Water with a high conductivity is more likely to have higher levels of harmful contaminants.	Run other tests to determine the cause.
Turbidity	NTU	5		5	>1	Cloudiness of the water	General indicator of water quality and how well the filters are working.	Water with a high turbidity is more likely to have higher levels of disease-causing microorganisms.	An LWTS is necessary if >5. If the LWTS doesn't reduce it <5, add alum kit.
Hardness	ppm				100-300	Water hardness is the traditional measure of the capacity of water to react with soap. You need to use more soap if the water is hard. Hard water is caused variety of dissolved metallic ions (mainly calcium, magnesium, and iron.)	To determine if there is a high risk of corrosion or deposits. <100 is soft (can cause corrosion) >100 is hard >200 can cause deposits	Not a health concern in and of itself. Depends on what substances in the water make it hard or soft.	Determine the cause. Monitor system for corrosion and deposits.
pH	-		6.5-8.5	6.5-8.5		pH is a measure of how acidic or basic the water is.	For effective disinfection with chlorine, the pH should preferably be less than 8. Water with a low pH can cause corrosion of metal pipes.	Extreme pH's (<5 or >10) can affect health negatively, but it is unlikely that people would drink such water.	Determine the cause.
Chlorine, Free	ppm	4.0		4.0	0.3	Chlorine is the chemical added to the water to kill microorganisms.	To see if there is enough chlorine to kill the microorganisms, but not too much to harm people.	Eye/nose irritation; stomach discomfort	Adjust the amount of chlorine added

Total Coliform Bacteria	Col/100 ml	none		No BLUE or RED colonies allowed	-	Coliforms are a type of bacteria are naturally present in the environment. The test indicates the likelihood of harmful bacteria.	Can cause disease	Fecal oral diseases such as dysentery, typhoid, and cholera	Did you do the test correctly? Check chlorine levels, tank cleanliness, and whether the operator backwashes.
Fecal Coliform Bacteria	Col/100 ml	none		No RED colonies allowed	-	Fecal coliforms are bacteria that come from human and animal fecal waste. This test indicates the likelihood of harmful bacteria.	Can cause disease	Fecal oral diseases such as dysentery, typhoid, and cholera	Same as w/ total coliforms.
Ammonia	ppm			2	2 taste: moldy and earthy	Ammonia is an important source of nitrogen to living things. High levels of ammonia in drinking water are likely caused by runoff from animal farms and fertilized crops as well as cement mortar used in wells.	The presence of ammonia at higher than natural levels (>.2ppm) is an important indicator of fecal pollution. Chlorine may react with ammonia and become unavailable for disinfection.	Common levels of ammonia are not a health concerns. The presence of ammonium in raw water may result in drinking-water containing nitrate.	Check Nitrate and Nitrite
Nitrate	ppm	10		10		Mainly caused by runoff from fertilizer use or leaching from septic tanks or sewage lines.	High levels of nitrates are unhealthy.	Infants under six months can become seriously ill and die from drinking water with high levels of nitrate. Symptoms shortness of breath and blue-baby syndrome.	Inform local health authorities
Nitrite	ppm	1		1		Mainly caused by runoff from fertilizer use or leaching from septic tanks or sewage lines.	High levels of nitrates are unhealthy.	Same as Nitrate, but not as common	Inform local health authorities
Chloride	ppm	N/A	250	-	250 Taste: salty	Chlorides are commonly found nature as salts of sodium, potassium, and calcium. Chloride in the water comes from soil, inorganic fertilizers, septic tank leaks, animal feeds, industry, irrigation drainage, and seawater intrusion.	Affects taste. Chloride levels may increase when water is treated with chlorine. Chloride can increase corrosivity and concentration of metals in water.	Healthy individuals can tolerate the intake of large quantities of chloride provided they drink a lot of fresh water.	-
Sulfate	ppm	N/A	250	500	250	Sulfates occur naturally in numerous	High levels of sulfate in	diarrhea	See if too much

						minerals. The highest levels usually occur in groundwater and are from natural sources.	the water may cause it to taste bad and may contribute to the corrosion of distribution systems.		alum has been added
Copper	ppm	1.3	1.0	1.3	>2.5 Taste: metallic and bitter taste	Copper is a metal that is naturally found in the soil. It is also used for making electrical wires, pipes and in agricultural pesticides.	High levels may cause corrosion and the color (blue/green) of water is also impacted.	Short exposure: gastrointestinal problems Long exposure: liver or kidney damage	Inform local health authorities
Arsenic	ppm	.01		.01	-	Arsenic is found in the soil in <u>some</u> parts of the world, but it can come from runoff from orchards and industry	Causes <u>serious</u> health problems	Skin damage, problems with circulatory system, and many types of cancer	Contact WMI engineer for advice. Inform local health authorities.
Manganese	ppm		.05	0.4	.05 Taste: bitter and metallic	Manganese is a metal commonly found along with iron in the soil.	High levels of manganese can make the water taste bad and leave black deposits in the pipes.	Manganese is an essential mineral. There have not been health studies that clearly show that it is harmful.	Aerate water before LWTS and add alum kit
Total Iron	ppm		.3	3	>0.3	Iron is the second most abundant metal in the earth's crust.	Turbidity and color may develop in above 0.1 ppm. Affects taste at above 0.3 ppm. Laundry stains at above 0.3 ppm.	Iron is an essential element in human nutrition. Estimates of the minimum daily requirement range from about 10 to 50 mg/day. This means that concentration of 1-3 mg/L is healthy.	Aerate water before LWTS and add alum kit