EPA Water Contaminant Chart

The following chart shows some contaminants and their potential effect on humans, as well as their source.

Contaminant	Possible Effect	Source
Microbials		
Coliform and other bacteria	Gastroenteric infection, dysentery, typhoid fever, and cholera	human and animal fecal matter
Giardia lambia	Gastroenteric disease	human and animal fecal matter
Legionella	Legionnaire's disease	natural waters, some water heaters
Turbidity	Interferes with disinfection, filtration	erosion, soil runoff, and discharges
Inorganics		
Asbestos	Cancer	asbestos cement in water systems
Arsenic	Cancer, skin and nervous system toxicity	pesticide, industrial waste, and smelting
Barium	Circulatory system effects	geological
Cadmium	Kidney effects	epoxy sealants, spent coal, and pigments
Fluoride	Skeletal and dental damage	fluoridated water, fertilizer, and aluminum
Lead	Kidney and nervous system damage	lead pipe and lead-based solder
Mercury	Kidney and nervous system disorders	crop runnoff and batteries
Nitrate	Blue baby syndrome (methemoglobinemia)	fertilizer, sewage, and animal waste
Selenium	Liver damage	smelting and coal/oil combustion
Organics		
1,2,4 Trichlorobenzene	Changes in adrenal glands	discharge from textile finishing factories
Acrylamide	Cancer, nervous system or blood problems	added to water during sewage treatment
Benzene	Cancer, anemia	fuel, drugs, paint, and pesticides
Carbon Tetrachloride	Cancer, liver problems	cleaning solvents
Polychlorinated Biphenyls (PCBs)	Cancer, skin and liver damage, nausea	used in electrical transformers
Total Trihalomethanes	Cancer	surface water treated with chlorine
Tetrachloroethylene	Cancer, liver problems	dry cleaning materials waste, and solvents
Toluene	Nervous system, kidney or liver problems	discharge from petroleum factories
Styrene	Liver, kidney or circulatory problems	discharge from rubber and plastic factories, and leaching from landfills
Vinyl Chloride	Cancer	PVC pipe; solvent breakdown
Pesticides		
Carbofuran, Chlordane, Endrin, Heptachlor epoxide, Lindane, Methoxychlor, Toxaphene	Cancer, nervous system, respiratory system, liver, kidney, anemia, leukemia	insecticide for cotton, potatoes, corn, and alfalfa; used as fumigants; heptachlor epoxide converts to heptachlor by soil and water organisms
Herbicides		
Alachlor, Atrazine, Dalapon, Dinoseb, Diquat, Endothall, Glyphosate, Oxamyl (Vydate), Picloram, Simazine, 2,4-D Pentachlorophenol, 2,4,5-TP (Silvex)	Cancer, nervous and reproductive system, respiratory system, liver, heart, and kidney	herbicide for corn, soybeans, sugar cane, and wheat; pentachlorophenol was also used as a wood preservative

For a complete list of contaminants go to:
www.epa.gov/safewater/mcl.html#mcls

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Q&A

Question:
Does the government assure that both public water supplies and individual well water supplies are safe for drinking?

Answer:
The federal government has no regulations that pertain to individual well water supplies. The government does, however, regulate public water supplies through standards set by the Safe Drinking Water Act (SDWA) of the Environmental Protection Agency (EPA). These regulations fall under two categories:

- *Primary drinking water standards* (see panel at right)
- *Secondary drinking water standards* (see panel at right)

Question:
How do I know if my water meets the federal drinking water standards?

Answer:
Municipal Water – All Community Water Supply's (CWSs) must deliver a Consumer Confidence Report (CCR) to their customers by July 1 of each year. The CCR provides a snapshot of water quality over the preceding year. CCRs must include water quality data, monitoring results and an explanation of their significance, and health effects language and "likely source" information for Maximum Contaminant Levels (MCL) and treatment technique violations.

The 2001 Arsenic Rule updates the specific health effects language and likely source information for arsenic.[1]

Well Water – There are several different sources of water analysis information. State Health Departments and local universities are good places to start. Water treatment specialists will also analyze water for free or nominal cost. There are also numerous local and national laboratories that will analyze water for a more substantial fee.

Question:
What do I do if my water does not meet the federal drinking water standards?

Answer:
Water treatment methods are available to solve most problems associated with water quality. As in the case of most decisions you make, professional advice is the best advice. Seek out a certified water treatment professional who can provide the proper equipment to solve your water quality problems.

[1] *Source: EPA Arsenic Guidance - November 2001*

Primary
Drinking Water Standards

Primary drinking water standards are set at levels to protect human health, and take into account the ability of municipal water treatment systems to reach these levels based on technology. Every community water supply in the country, serving 15 or more connections or at least 25 people, must meet the following standards:

Contaminant	Maximum Level
Microbials	
Coliform bacteria	<1CFU/100mL
Turbidity	0.3-1.0 NTU
CFU = Colony Forming Units/100 milliliters	
NTU = nephelometric turbidity units	
Inorganics	
Arsenic	0.01 mg/L
Barium	2.00 mg/L
Cadmium	0.005 mg/L
Chromium	0.1 mg/L
Fluoride	4 mg/L
Lead	0.015 mg/L
Mercury	0.002 mg/L
Nitrate	10.00 mg/L
Nitrite	1.0 mg/L
Selenium	0.05 mg/L
mg/L = milligrams per liter	
Organics	
Endrin	0.002 mg/L
Lindane	0.0002 mg/L
Methoxychlor	0.04 mg/L
Toxaphene	0.003 mg/L
2,4-D	0.07 mg/L
2,4,5-TP (Silvex)	0.05 mg/L
Trihalomethanes	0.080 mg/L
mg/L = milligrams per liter	
Radionuclides	
Alpha emitters	15 pCi/L
Beta photon emitters	4 mrem/yr
Radium-226 & Radium-228	5 pCi/L
pCi/L=pico curies per liter	
mrem/yr = millirem per year	

Community water supplies must report any violation of these standards to the public and the appropriate government agency. Most of the contaminants occur naturally in our environment and in the foods we eat. The standards reflect the levels we can safely consume in our drinking water.

Secondary
Drinking Water Standards

Secondary drinking water standards deal with nuisance chemicals, such as taste and odor and they are not mandatory. The EPA recommends them as reasonable goals for drinking water quality but does not enforce compliance. The states may use them to set local contaminant levels. The secondary standards are listed below:

Contaminant	Recommended Level
Chloride	250 mg/L
Color	15 TCU
Corrosivity	non-corrosive
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 TON
pH	6.5-8.5
Silver	0.1 mg/L
Sulfate	250 mg/L
TDS	500 mg/L
Zinc	5 mg/L
TCU = total color units	
TON = threshold odor number