The Take Back the Tap Guide to Safe Tap Water

How to read your water quality report and choose the best filtration system for your home
About Food & Water Watch

Food & Water Watch works to ensure the food, water and fish we consume is safe, accessible and sustainable. So we can all enjoy and trust in what we eat and drink, we help people take charge of where their food comes from, keep clean, affordable, public tap water flowing freely to our homes, protect the environmental quality of oceans, force government to do its job protecting citizens, and educate about the importance of keeping shared resources under public control.

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Part One: Your Water Quality Report

We All Have a Right to Know What’s in Our Water

What Is a Water Quality Report?

Who Gets a Water Quality Report?

When Is a Water Quality Report Issued?

What Does a Water Quality Report Tell You?

Why Is a Water Quality Report Important?

How Is a Water Quality Report Distributed?

Decoding the Water Quality Report of Our Nation’s Capital

Part Two: Filtration Systems

You’ve Read Your Report. Now What?

What to Consider When Buying a Water Filter

Water Filtration: What’s on the Market?

Water Filter Technologies

Consider Which Filter Is Best for You

Water Quality Concerns and Filtration Methods

Pharmaceuticals, Personal Care Products and Hormone-Disrupting Chemicals

Verify the Quality of Your Filter: Check for Third-Party Certification and Unbiased Ratings and Reviews

Consumers Union Water Filter Ratings
“These bottled water companies say they’re just meeting consumer demand, but who would demand a less sustainable, less tasty, way more expensive product, especially when you can get it for almost free from your kitchen?”

-Annie Leonard, The Story of Bottled Water
From coast to coast, consumers are kicking the bottled water habit and taking back the tap. The word is out: Bottled water can be bad for our wallets, our health and our environment.

If you’re among the growing number of people making the move to tap water, you may be interested to learn more about your local water supply. Consumer standards are actually more stringent for the quality and safety of tap water than for bottled water. The best way to find out more about your local water is to read your water quality report. This guide is intended to help you understand what your water quality report is and how to interpret what it tells you.

We All Have a Right to Know What’s in Our Water

Your water utility monitors and treats your drinking water according to federal standards authorized by the Safe Drinking Water Act of 1974. In 1996, Congress added a requirement that utilities must notify the public about any regulated contaminant detected in the water supply, as well as any water quality violation, so that consumers know if their water has been contaminated.

As a result, each year, your local water utility is required to issue a water quality report.
What Is a Water Quality Report?
Annual water quality reports, also called consumer confidence reports, are intended to help consumers make informed choices about their drinking water. While these reports contain useful information, they can also be confusing and full of jargon. This guide is intended to help you understand what your water quality report is and how to interpret what it tells you.

A water quality report lets you know what contaminants, if any, are in your drinking water and how these contaminants may affect your health. It lists all the regulated toxins that were detected in your water over the preceding calendar year.

Who Gets a Water Quality Report?
A water quality report is available for every customer of a community water system, which is one that provides year-round service to more than 15 households or more than 25 people.

When Is a Water Quality Report Issued?
You should receive your report by July 1 of each year.
What Does a Water Quality Report Tell You?
Every water quality report must contain:

- The source of the drinking water, be it a river, lake, groundwater aquifer or some other body of water;
- A brief summary of the state’s source water assessment, which measures how susceptible the source water is to contamination, and how to get a copy of the complete assessment;
- The U.S. Environmental Protection Agency (EPA) regulations and health goals for drinking water contaminants;
- A list of all detected regulated contaminants and their levels;
- Potential health effects of any contaminant detected at a level that violates the EPA’s health standard;
- An educational statement for people with weakened immune systems about cryptosporidium and other microbial contaminants;
- Contact information for the water system and the EPA’s Safe Drinking Water Hotline.

Why Is a Water Quality Report Important?
Your water utility is required by law to tell you about any violation of EPA water quality standards at the time it occurs (through media outlets such as newspapers and television) and again in the annual water quality report. You should not drink water that fails to meet EPA standards because it may be unsafe. Thankfully, public utilities have worked hard to improve water quality. As a result, more than 90 percent of water systems meet all EPA regulations.

The report must also disclose a list of all regulated contaminants that have been detected in the water supply. The EPA sets the maximum level of contaminants allowed in drinking water based on the filtering and treatment capabilities of current technology. The water quality report also tells you about potentially harmful substances found in your water at levels below their legal limit.

How Is a Water Quality Report Distributed?
This depends on the size of the water system. All large water systems mail out the reports, often as an insert in your water bill. Very large systems must both mail the reports and post them online. Small systems serving fewer than 10,000 people can have the mailing requirement waived. In this case, how-
ever, they must publish the report in at least one local newspaper and make it available to the public upon request.

Water systems also must make a “good faith effort” to reach renters, workers and other consumers who use the water but do not receive water bills. Utilities should use a combination of different outreach methods to notify users, such as posting the reports online, mailing them and advertising in local newspapers.

More information is available online at www.epa.gov/safewater/ccr/. For general questions, you can contact the EPA’s Safe Drinking Water Hotline toll-free at 1-800-426-4791.
You’ve Read Your Report. Now What?
The United States provides some of the cleanest drinking water in the world, and more than 90 percent of water systems meet all EPA regulations. Some consumers may prefer to filter their tap water, however, because they prefer the taste or want to remove minerals and particulates. This section highlights the types of available filters to help you to determine which one is best for your needs.

What to Consider When Buying a Water Filter
What impurities do you want to remove from your water? Are you concerned about health risks, or simply unappetizing tastes and odors? Different filters are designed to remove various impurities, so be sure that the filter you buy will do the job.

Once you have read your water quality report, determine what, if anything, you would like to filter out of your water. Depending on the water quality where you live, you may decide that you do not need to filter your water at all.
Water Filtration: What’s on the Market?

Water filters come in many shapes and sizes. Depending on your filtration needs, lifestyle preferences and budget, you may want to consider the following options, whose descriptions were adapted from a May 2010 *Consumer Reports* article:

**Carafe, or “pour-through,” filters** are the simplest water filters to use. The filter fits inside a pitcher that you can keep in your refrigerator. Carafes are inexpensive and easy to use. However, the filters have a short lifetime and can only filter a limited amount of water at a time.

**A faucet-mounted filter** is exactly what it sounds like — a filter that is screwed directly on to your faucet. These filters require minimal installation, but they slow the flow of water and can’t be used on all faucets.

**Countertop filters** are best for filtering large quantities of water without modifying plumbing. They’re less likely to clog than carafe or faucet-mounted filters, but can clutter countertops and can’t be used with all types of faucets.

**Plumbed-in filters** are installed directly into an existing water pipe. Often, they are installed under the sink (and are sometimes referred to as “under-sink” filters). They can be plumbed-in to the existing sink faucet, which may require drilling a hole in the countertop, or they can dispense water through a separate tap. These filters are best for filtering large amounts of water without modifying the existing faucet or cluttering the counter. However, they take up cabinet space and require plumbing modifications.

**Point-of-entry, or “whole-house,” filters** are installed directly in the water main and filter all the water in a house, including water for the kitchen, laundry room and bathrooms. These filters have a long lifetime and are an inexpensive way to remove sediment, rust and, in some cases, chlorine from household water. But most won’t remove most other contaminants. They also require professional installation.

Water Filter Technologies

Different water filter products use different technologies. Some use more than one. If you are looking for a home water filter, you are likely to come across some of these terms:
Particulate/mechanical filter: These are simple screens that block large particles. They often function as “prefilters” in a multiple-step water filter.

Adsorption/Activated Carbon: Adsorption refers to a physical process where particles in water are removed because they stick to the surface of the material in the filter. These filters are usually made with carbon, often in granulated or powdered form. They are the most common filters on the market and come in different forms including pitchers and faucet-mounted systems. They are generally effective for reducing the most typical worrisome compounds that can be found in municipal water: chlorine, chlorine byproducts and dissolved volatile organic chemicals (VOCs) such as pesticides and herbicides. Carbon adsorption filters generally work well for reducing bad odors and tastes.

Softeners/Ion Exchange Units: Water softeners use a process called ion exchange to reduce hard metals — including lead — in water. When water passes through an ion exchange unit, hard metal ions are replaced by sodium ions, leaving the water “softer” as a result — but also saltier. This technology is often used in combination with adsorptive or reverse-osmosis filters. Potassium chloride water softeners work in a similar way to sodium chloride softeners, but without increasing levels of salt in the water; this makes potassium chloride softeners a better choice for some uses, such as watering plants.

Ultraviolet (UV) Treatment: This treatment uses UV light to kill germs that may be present in the water. UV treatment is the only treatment certified by the National Sanitation Foundation International to reduce bacteria.

Reverse Osmosis: Reverse osmosis is a process where water is forced through a membrane that filters out molecules physically larger than the water molecules. Although reverse osmosis works well for reducing minerals, it is not effective for chlorine or volatile organic compounds (VOCs), which are more
likely to be concerns in municipal tap water. However, many reverse-osmosis units are combined with pre-filters and carbon filters to address this concern. Reverse-osmosis filters are expensive and very inefficient — they waste from one to three gallons of water for every gallon that they filter.

**Distillation:** Water distillers heat water so that it turns into steam, which is then collected and returned to its liquid form. Contaminants are left behind when the water evaporates. Thus, distillation is very effective for removing most minerals and bacteria. However, some distillation units do not remove VOCs. Distillation also requires more energy than other methods, to heat the water.

**Consider Which Filter Is Best for You**

When you are considering different types of filters, keep in mind that each individual product on the market has its own pros and cons.

Individual products may use multiple technologies and are often marketed as two (or more) stage filters. Carafe, faucet-mounted and countertop filters typically use a combination of adsorption and ion exchange resins, while plumbed-in systems may use those technologies in addition to reverse osmosis.

Filters also come in a wide range of prices. Most carafes and faucet-mounted filters cost between $20 and $50, while countertop, under-sink and whole-house filters can range from $50 to $900.

When considering the price of a water filter, remember that the total cost includes your initial purchase price as well as any installation, maintenance or
replacement fees. Filter parts need to be changed periodically to prevent clogging, so be sure to consider how much replacement parts cost, as well as the manufacturer’s estimated life span for the product.

Also consider the amount of water you use. Some filter types have larger water capacities than others. Carafes, for example, can filter a few cups or gallons at a time, while faucet-mounted or under-sink filters work directly through a tap.

Most importantly, make sure that the individual product reduces the specific contaminants that you want to remove from your water. Generally, products will include claims on their packaging or advertising regarding which contaminants they reduce and the percentage reduction rate. See the table below for more information about common contaminants of concern and which type of filter will reduce the contaminants.

**Water Quality Concerns and Filtration Methods***

<table>
<thead>
<tr>
<th>Contaminant/Quality Concern</th>
<th>Filtration Method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chlorine</strong></td>
<td>Carbon/Charcoal Filter</td>
<td>Contact your local water utility to find out which disinfectant is used in your drinking water. Water filters certified to reduce chlorine do not necessarily work for chloramine.</td>
</tr>
<tr>
<td><strong>Chlorine Byproducts (Trihalomethanes)</strong></td>
<td>Carbon/Charcoal Filter</td>
<td>Trihalomethanes are a type of VOC (volatile organic compound), so products certified to reduce VOCs will reduce this contaminant.</td>
</tr>
<tr>
<td><strong>Taste and Odor</strong></td>
<td>Carbon/Charcoal Filter</td>
<td></td>
</tr>
<tr>
<td><strong>Lead</strong></td>
<td>Carbon, Distillation, Reverse Osmosis</td>
<td></td>
</tr>
<tr>
<td><strong>Fluoride</strong></td>
<td>Distillation, Reverse Osmosis</td>
<td>Not all public drinking water systems add fluoride to the water. Check to see if your community does by reading your annual water quality report.</td>
</tr>
<tr>
<td><strong>Chloramines</strong></td>
<td>Some Carbon/Charcoal Filters</td>
<td>Check that the system you select is certified to reduce chloramines. Systems that reduce chlorine do not necessarily reduce chloramines.</td>
</tr>
<tr>
<td><strong>Perchlorates</strong></td>
<td>Reverse Osmosis</td>
<td></td>
</tr>
<tr>
<td><strong>Arsenic</strong></td>
<td>Distillation, Reverse Osmosis</td>
<td>Two different forms of arsenic can be found in water, so it is important to know which type of arsenic you want to filter before choosing a water treatment system.</td>
</tr>
</tbody>
</table>

*Information taken from National Sanitation Foundation’s Contaminant Guide. Please note that filters and treatment systems should be certified by a third party agency. Check to ensure that the brand of filter you choose is certified to address your water quality needs.
Pharmaceuticals, Personal Care Products and Hormone-Disrupting Chemicals

Consumers are increasingly concerned about pharmaceutical residues and other hormone disrupting chemicals in drinking water. These chemicals are not regulated, but studies have shown that they are showing up in trace amounts in drinking water. According to the National Sanitation Foundation, there is no testing available at this time to measure the potential ability of home water treatment systems to reduce pharmaceuticals.

Verify the Quality of Your Filter: Check for Third-Party Certification and Unbiased Ratings and Reviews

Make sure that your filter is certified by an independent certifying agency. Not all filters live up to industry standards. Make sure that the product you are buying does. The packaging should display certification from an independent certifying agency such as the National Sanitation Foundation International or Water Quality Association. For more information about products and product certification guidelines, contact:

- National Sanitation Foundation International: 800-673-6275, Email: info@nsf.org
- Water Quality Association: 630-505-0160

Avoid biased filter review sites and marketing claims. If you search the Internet for water filter reviews, you often are directed to sites where every single “best” option is from the same company, and includes a link to a site where you can buy that brand of filter. Avoid buying filters from such websites.

The best sources of reviews and ratings come from organizations that do not sell the products, such as Consumer Reports. Consumer Reports is published by Consumers Union, a nonprofit organization that provides consumers with unbiased product tests and ratings.

The most recent water filter ratings published by the Consumers Union are reprinted with permission on the following page. Be sure to cross-reference other independent sources for the best results.
Overview
Our top picks tend to be excellent at removing those impurities their makers claim they remove. Don’t forget installation costs, which could be $150 to $300 for an undersink or reverse-osmosis system.

CR Best Buy
These offer the best combination of performance and price. All are recommended.

Suitable for a small volume of water:
A2 Clear20 S50 CR Best Buy
A3 Brita 32
B1 Culligan S5 CR Best Buy
B2 Pur S5 CR Best Buy

A2 is excellent at removing lead and chloroform, its “quick-connect” hose improves flow rate but won’t work with spray faucets. A3 offers superior clog resistance but isn’t claimed to remove organics. Among faucet-mounted models, B1 delivers excellent filtering, and B2 has a filter-life indicator.

When more water is needed:
C2 Crystal Quest 540
C3 Aquasana 500 CR Best Buy
D3 Omni 515
D5 Culligan SHS
D7 Whirlpool S30 CR Best Buy

C2 is quick but doesn’t catch impurities as well as other countertop models. If speed is less critical, C3 is excellent at removing lead and chloroform. Among undersink systems, D3 is inexpensive and fast-flowing, but replacement filters are costly. D5 has one of the longest-lasting filters. D7 offers top value and very good clog resistance.

Best for serious contamination:
E4 Kenmore S30
E5 Whirlpool S50 CR Best Buy

E4 costs more, but its 4-gallon storage tank is more than double the size of E5’s.

Guide to the Ratings
Overall score is based mainly on effectiveness at removing lead and chloroform. Lead removal indicates the percentage of lead that was removed by each filter. Chloroform removal rates the percentage of chloroform removal and also indicates how well a filter will catch organic compounds and by-products from water systems, and improve bad taste. Flow rate is how fast a volume of water is filtered through the cartridge; scoring schemes differ by filter type. Clogging measures how well a filter retained its flow rate and whether it stopped flowing before its claimed life span. Filter cost per year is based on claimed cartridge life. PS indicates that filters should be replaced by a professional service. Price is approximate retail without installation.

Ratings
Water filters
In performance order, within types. (Types designated A, B, etc.)

<table>
<thead>
<tr>
<th>Brand &amp; model</th>
<th>Price</th>
<th>Filter cost/yr.</th>
<th>Overall score</th>
<th>Lead removal</th>
<th>Chloroform removal</th>
<th>Flow rate</th>
<th>Clogging</th>
<th>Filter-life indicator</th>
</tr>
</thead>
</table>

A CARAFE Store in the refrigerator.
1. Tersano Lotus LW1000 $150 40 0 0 0 0 0 0 0 0 0
2. Clear20 O CW5000A 30 60 0 0 0 0 0 0 0 0 0
3. Brita Smart Pitcher 03091412 50 20 0 0 0 0 0 0 0 0 0
4. GE EXPLO50H 22 50 0 0 0 0 0 0 0 0 0
5. Zero Water Z-Pitcher 35 180 0 0 0 0 0 0 0 0 0
6. Pur CR-4000C 20 120 0 0 0 0 0 0 0 0 0
7. Crystal Quest CQE-PI-00600 25 30 0 0 0 0 0 0 0 0 0

B FAUCET-MOUNTED Attach to the faucet by removing the aerator.
1. Culligan FM-25A 15 84 0 0 0 0 0 0 0 0 0
2. Pur Vertical FM-3700 25 29 0 0 0 0 0 0 0 0 0
3. Brita Advantage On Tap OPF-100 20 50 0 0 0 0 0 0 0 0 0
4. GE FXM200B (Home Depot) 40 100 0 0 0 0 0 0 0 0 0
5. Crystal Quest CQE-FM-00501 35 30 0 0 0 0 0 0 0 0 0

C COUNTERTOP Attach to the faucet by removing the aerator.
1. Waterpik Kitchen S-III 59 100 0 0 0 0 0 0 0 0 0
2. Crystal Quest CQE-CT-001D9 140 46 0 0 0 0 0 0 0 0 0
3. Aquasana AQ-4000 100 100 0 0 0 0 0 0 0 0 0
4. Zvev Water Purifier ZPS130 300 60 0 0 0 0 0 0 0 0 0

D UNDERSKIN Requires plumbing, sink, or countertop changes.
1. Aqua-Pure AP-DW39000 450 150 0 0 0 0 0 0 0 0 0
2. American Plumber WLC-1000 200 40 0 0 0 0 0 0 0 0 0
3. Omni COF-3 115 30 0 0 0 0 0 0 0 0 0
4. Kohler Aquifer K200/202 215 180 0 0 0 0 0 0 0 0 0
5. Culligan Preferred Series 350 145 90 0 0 0 0 0 0 0 0 0
6. Aqua-Pure AP Easy Complete 180 130 0 0 0 0 0 0 0 0 0
7. Whirlpool Gold WH1DE02 (Lowes) 130 64 0 0 0 0 0 0 0 0 0
8. GE Smart Water G48VTESW (Home Depot) 160 80 0 0 0 0 0 0 0 0 0
9. GE G5XLSSR (Home Depot) 120 180 0 0 0 0 0 0 0 0 0
10. Kenmore Elite 38501 140 130 0 0 0 0 0 0 0 0 0
11. Everpure H-300 single EV9270 300 98 0 0 0 0 0 0 0 0 0
12. Watts Premier WP-2 BVC 80 60 0 0 0 0 0 0 0 0 0
13. Everpure H-1000 EV9282-00 415 170 0 0 0 0 0 0 0 0 0

E REVERSE-OSMOSIS Requires plumbing, sink, or countertop changes.
1. Kinetico K8 Drinking Water Station 1,800 95 0 0 0 0 0 0 0 0 0
2. Coway P-OYO 640 95 0 0 0 0 0 0 0 0 0
3. Omni RO2000 230 84 0 0 0 0 0 0 0 0 0
4. Kenmore Elite 38556 300 80 0 0 0 0 0 0 0 0 0
5. Whirlpool Gold WHIR152S (Lowes) 150 60 0 0 0 0 0 0 0 0 0
6. Pentek RO-3000 260 34 0 0 0 0 0 0 0 0 0
7. Culligan Good Water Machine 700 95 0 0 0 0 0 0 0 0 0
8. GE Profile Smart Water PWR15SF (Home Depot) 280 100 0 0 0 0 0 0 0 0 0
9. Ecowater ER9-375 690 95 0 0 0 0 0 0 0 0 0

*Filter costs per year for reverse-osmosis models don’t include the membrane filter.

Tap water is tested more frequently for safety concerns than bottled water, but the water quality reports issued by local utilities can be confusing to read. Use this guide to help understand these reports and why they are important. Then get tips on finding the right filter for your household tap water based on the water quality in your area.