



Water Quality in the East Bay



water quality

Q: Where does East Bay tap water come from? How does it flow here?

The water that the East Bay Municipal Utility District (EBMUD) provides to people in Alameda and Contra Costa County comes from the watershed of the Mokelumne River in the Sierra Foothills. EBMUD secured water rights to the river in the early 1920s and built Pardee Dam across a valley, creating Pardee Reservoir. The reservoir supplies water to more than 1.2 million people in 22 East Bay cities from San Lorenzo to Crockett, including Oakland and Berkeley. Three 6-foot-wide steel aqueducts carry the water across the Central Valley to Walnut Creek, more than 80 miles away. Gravity alone will move up to 202 million gallons a day. With all three aqueducts open and the station's pumping plants running, EBMUD can move 325 million gallons. The energy required for all water treatment and pumping, including over the East Bay hills, is the equivalent of the energy required to power about 95 million homes. From Walnut Creek, the water goes either to a treatment plant in Orinda or to three East Bay reservoirs, where it takes on local runoff before reaching two treatment plants. Together, the reservoirs can hold enough water to supply locals for four to six months. From the treatment plants, which add chloramine and fluoride, the water flows through more than 3,944 miles of distribution pipes and 164 neighborhood reservoirs — and on to businesses and households.

Q: Is East Bay tap water safe to drink?

The quality of the EBMUD water supply is very high. EBMUD does regular monitoring and issues annual reports that show the levels of contaminants in our water. These reports are available on request. Impurities are most often

the result of contamination from pipes coming from the water main and from household plumbing. Chemicals that are added for disinfection and other purposes — such as chloramine and fluoride — may also be of concern.

Q: What are the most common contaminants in East Bay water?

- Lead and Copper — Although water coming from the EBMUD water main is relatively free of these heavy metals, they can enter the water supply from pipes that connect the water main to the home, and from plumbing and faucets inside the home. Hot water systems in particular can contain elevated levels of lead and copper, and drinking water from hot water taps is inadvisable. The best way to know how much lead is in your water is to have it tested. If the lead level is more than fifteen parts per billion, it is best to filter your water. **Note that lead in East Bay tap water is not common.** For more information: www.aclppp.org/leadpoisoning/water.htm
- Chloramine and Fluoride — EBMUD uses chloramine to disinfect the water supply. Chloramine is a compound made from chlorine and ammonia. The effects of chloramine on human health need to be studied more thoroughly. It's believed that chloramines make water more corrosive. Chloramines must be removed from water used in dialysis machines and are toxic to fish and reptiles and should not be used in aquariums and fish ponds. Unlike chlorine, Chloramine will not evaporate from water by itself and not all water filters that remove chlorine will remove chloramine. For example, showerhead filters and filter balls that are used in bathtubs do not remove chloramine. Chloramine can be removed for drinking water purposes by a carbon block or activated carbon filter that can be installed on a kitchen faucet.

factsheet

Water Quality in the East Bay (continued)

According to the San Francisco Public Utilities District, boiling water for 20 minutes will remove chloramine. A short boil of water to prepare tea or coffee will remove about 30% of chloramine. Adding citrus to a water pitcher (for example, slicing peeled oranges into a 1-gallon water pitcher) will neutralize chloramine within 30 minutes. Both chlorine and chloramine can be removed for bathing purposes by dissolving Vitamin C in the bath water (1000 mg Vitamin C tablet will neutralize chloramine in an average bathtub). See SFPUC, http://sfwater.org/Files/FAQs/Removal_8_10.pdf. Fluoride can only be removed with reverse-osmosis filtration. For more about the health concerns with Fluoride, see www.fluoridealert.org.

Q: When should I have my water tested? How do I find a lab?

If you are pregnant or there are children in your home, or you are otherwise concerned about the possibility of lead or other contaminants in your water, it's recommended that you test your water. To find a certified testing laboratory, contact the Ecology Center, or get referrals from the Eco-Directory at ecologycenter.org/directory

Q: What kind of water filtration system should I choose?

To find a filter that removes Chloramine and lead, we recommend 1) reviewing brands at NSF.org, a certifying organization that tests filters and lists them by which contaminants they remove. (Multi-Pure filter is one brand that removes Chloramine.) 2) Read Consumer Reports ratings for quality reviews.

There are many options for filtering your water, varying from a \$10 carafe to a \$1000+ reverse-osmosis system. Your choice will depend on your budget and on what contaminant(s) you are concerned about. If you've had your water tested, choose a filter that specifically removes the contaminants identified in your test results. Also factor in the maintenance cost of the system - the price you pay for replacement filters and other upkeep.

Common filtration options include:

- **Carafes** — Carafes are inexpensive and improve taste. The best carafes can reduce lead and organic chemicals but they won't filter out chloramine (or remove pathogens and fine sediments). They are low-cost, but be aware that replacement filters can add significantly to the actual cost of using a carafe. Cost: \$
- **Tap-mounted** — These are inexpensive and easy to install yourself. Most do only a fair job of removing lead and won't remove chloramine. These filters must be changed often. Cost: \$
- **Countertop** — These are fairly easy to install yourself. Countertop filters generally have a large capacity. We recommend a carbon-block filter that will remove chloramine and lead. Cost: \$\$
- **Under-sink filter** — These perform similarly to countertop filters, but don't use counter space. These may need a plumber to install. They can be slightly harder to maintain since there are multiple cartridges to change. Those with a carbon-block filter will remove chloramine and lead. Cost: \$\$
- **Reverse-osmosis systems** — These systems are highly effective against the widest range of contaminants, including industrial chemicals, lead, nitrates, and toxic metals such as barium and chromium. Only reverse osmosis systems will remove fluoride. The downside is that they are expensive, slow, and waste large amounts of water during the filtration process — about 5 gallons per hour. Environmentally, they are a poor choice. Cost: \$\$\$
- **Whole House filters** — You can install a filtration system to your main water input (rather than at each tap) that will filter all water piped into your house. Cost: \$\$\$\$

Notes:

Boiling — bringing water to a rolling boil for one minute — will kill most harmful bacteria and parasites. It won't remove lead however, and boiling concentrates inorganic impurities such as nitrates and sulfates.

“Activated Carbon Filters” — most carafes, faucet-mounted, countertop, and under-sink filters — use an activated carbon filter, but not all carbon filters are of the same quality. Make sure the unit has a good supply of carbon for effectiveness; cheaper models may have insufficient amounts. A carbon block filter is preferable to carbon granules. Carbon block filters will remove chloramine whereas carbon granule filters will not.