

Annual
WATER
QUALITY
REPORT

Reporting Year 2012



Presented By _____
Walnut Valley Water District

PWS ID#: 1910234

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

**Chi tiết này thật quan trọng.
Xin nhờ người dịch cho quý vị.**

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

**이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시오.**

**この情報は重要です。
翻訳を依頼してください。**

این اطلاعیه شامل اطلاعات مهمی را جمع به آب آشامیدنی است. اگر نمی‌توانید این اطلاعات را به زبان انگلیسی بخوانید، لطفاً کسی که می‌تواند تایلر را بگیرد تا مطالب را برای شما به فارسی ترجمه کند.

**此份有關你的食水報告，
內有重要資料和訊息，請找
他人為你翻譯及解釋清楚。**

**此份有关你的食水报告，
内有重要资料和讯息，请找
他人为你翻译及解释清楚。**

“هذا التقرير يحتوي على معلومات مهمة تتعلق بمياه الشفة (أو الشرب).
ترجم التقرير، أو تكلم مع شخص يستطيع أن يفهم التقرير.”

There When You Need Us

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2012. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Where Does My Water Come From?

As you may be aware, our District is dependent on surface water that is imported into Southern California by Metropolitan Water District (MWD). MWD imports and treats surface water transported through two major conveyance systems: the 242-mile-long Colorado River Aqueduct and the 444-mile-long State Water Project (SWP). Water transported via the Colorado River Aqueduct originates in the Colorado River basin states, and water transported by the State Water Project conveyance system originates in the Sacramento-San Joaquin Delta. MWD treats this water at their Weymouth Filtration plant in the City of La Verne. The water is then purchased by the District through our designated wholesale water agency, Three Valleys Municipal Water District (TVMWD). The district also receives (SWP) water treated by TVMWD at their Miramar Water Treatment Plant in Claremont.

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria prior to filling up with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/qbw.asp.

Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Ty Maddux, Water Quality Specialist, at (909) 595-1268, ext. 321.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

No Health Hazard from Tap Water With Unpleasant Taste and Odor

Some residents may notice a musty taste and odor in their tap water from time to time, but it is an aesthetic problem caused by algae bloom and does not present a health hazard. The earthy taste and smell stem from an algae bloom in the east branch of the California State Water Project. The cause has been identified as both 2-Methylisoborneol, or MIB, and Geosmin. These nuisance compounds are produced from the growth of certain algae in freshwaters throughout the world. Unfortunately, people with sensitive taste and smell can detect these compounds in water levels as low as 5 parts-per-trillion. One part-per-trillion is equivalent to just 10 drops of MIB or Geosmin in enough water to fill the Rose Bowl. The Department of Water Resources (DWR) water quality experts apply copper sulfate, an approved method, to control the algae bloom. Consumers, however, can be assured that the taste-and-odor issues they may be experiencing in their tap water do not pose any health risks. Consumers may consider refrigerating drinking water to help improve its taste. Anyone interested in receiving additional information about the quality of Metropolitan Water District's (MWD) drinking water supplies can visit the MWD website, www.mwdh2o.com, for Annual Water Quality Report and other related materials.

Impact of Zebra Mussels

The zebra mussel is a small mussel native to Russia. In 1988, it reached North America by a transatlantic freighter. Since then, they have continued to spread throughout the country. Zebra mussels are very successful invaders because they live and feed in many different aquatic habitats and breed prolifically (each female produces 1 million eggs per year) for their entire five-year lifespan.

Adult zebra mussels colonize on living and non-living surfaces, including boats, buoys, piers, plants, and clams. They are a great concern to drinking water utilities because they can attach to water intake pipes, severely restricting the flow of fresh water. They can also impact water quality by increasing taste-and-odor problems in the water supply.

Zebra mussels are almost impossible to eradicate once they become established. Water utilities have had to retool their water intake systems to prevent zebra mussel-related problems costing millions of dollars a year. Utilities rely on a variety of methods to remove mussels from intake pipes; since there is no single, ideal removal solution, new methods are constantly under investigation.

While complete removal may be impossible, preventing zebra mussel spread is not. Human activities have spread them into many inland lakes and streams, usually through recreational boating, fishing, and diving practices. Simple steps such as draining live wells, cleaning vegetation off boat trailers, removing attached zebra mussels from boat hulls, and not dumping bait into lakes or rivers can prevent the spread of zebra mussels into non-infested waters.

Community Participation

The District's board meetings are typically scheduled, unless otherwise noticed, for 5:00 p.m. on the third Monday of each month, in the board room of the District's headquarters, located at 271 South Brea Canyon Road, Walnut, California. The Board meetings are open to the public. Anyone who is interested in the operations and business of the District is encouraged to attend.

Office Hours: The Customer Service Department is open Monday through Thursday, 7:00 a.m. to 5:00 p.m., and Friday, 7:00 a.m. to 4:00 p.m. • (909) 595-1268 • www.wvwd.com

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source and sent to an aeration tank, which allows for oxidation of the high iron levels that are present in the water. The water then goes to a mixing tank where polyaluminum chloride and soda ash are added. The addition of these substances causes small particles to adhere to one another (called floc), making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through layers of fine coal and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges.

Chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, soda ash (used to adjust the final pH and alkalinity), fluoride (used to prevent tooth decay), and a corrosion inhibitor (used to protect distribution system pipes) are added before the water is pumped to sanitized underground reservoirs, water towers, and into your home or business.

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

Inorganic Contaminants, such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, that may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;

Radioactive Contaminants, that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Source Water Assessment

In December 2002, the MWD completed a source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to recreation, urban and stormwater runoff, increasing urbanization in the watershed, and wastewater. State Water Project supplies are considered to be most vulnerable to urban and stormwater runoff, wildlife, agriculture, recreation, and wastewater. A copy of the assessment can be obtained by contacting MWD at (213) 217-6850.



What is the typical per-day water usage?

While usage varies from community to community and person to person, on average, Americans use 183 gallons of water a day for cooking, washing, flushing, and watering purposes. The average family turns on the tap between 70 and 100 times daily. About 74% of home water usage occurs in the bathroom, about 21% in the laundry room, and about 5% in the kitchen.

Why do water pipes tend to break in winter?

Liquids generally contract when frozen and become more dense; however, the unique qualities of water cause it to expand by up to 9% when it freezes. That is why water pipes burst when temperatures reach the freezing mark.

How much water is used to create the food we eat each year?

The average American consumes 1,500 pounds of food each year; 1,000 gallons of water are required to grow and process each pound of that food. Thus, 1.5 million gallons of water is invested in the food eaten annually by just one person! This 200,000-plus cubic feet of water per person is enough to cover a football field four feet deep.

Is it okay to use hot water from the tap for cooking and drinking?

No, ALWAYS use cold water. Hot water is more likely to contain rust, copper, and lead from household plumbing and water heaters. These harmful substances can dissolve into hot water faster than they do into cold water, especially when the faucet has not been used for an extended period of time.

What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, do not use any container with markings on the recycle symbol showing 7 PC (which is the code for BPA). You could also consider using stainless steel or aluminum containers that have BPA-free liners.

How much water is used in the shower?

A 10-minute shower can take 25 to 50 gallons of water. High-flow shower heads allow a flow of 6 to 10 gallons a minute. Low-flow shower heads can cut the rate in half without reducing pressure.

Fact *or* Fiction

Water treatment began as a way to remove disease-causing agents. *(Fiction: It was only in the 1950s that scientists began to suspect that water might carry diseases. Although earlier treatment of water could make the water safer, it was mainly done merely to improve the taste, smell, or appearance of the water.)*

About half of the world's water supply is available for drinking. *(Fiction: If all the world's water were fit into a gallon jug, the fresh water available for us to use would equal only about one tablespoon.)*

Due to its unique nature, water boils at the same temperature anywhere on the planet. *(Fiction: At sea level, water boils at 212 degrees Fahrenheit, but on top of Mt. Everest, water boils at 154 degrees.)*

Water regulates the temperature of the Earth. *(Fact: As in the human body, the water in our oceans, lakes, and streams plays a major role in regulating planetary temperatures.)*

The Mississippi River is longer than the Amazon River. *(Fiction: At 3,902 miles the Mississippi River is not as long as the Amazon River, which flows for 4,000 miles.)*

Forty trillion gallons of water a day are carried in the atmosphere across the United States. *(Fact: Forty percent of the atmosphere's moisture content falls as precipitation each day.)*

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	Walnut Valley Water District		TVMWD		MWD		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Aluminum (ppb)	2012	1,000	600	ND	NA	ND	NA	120	ND–210	No	Erosion of natural deposits; residue from some surface water treatment processes
Chloramines (ppm)	2012	[4.0 (as Cl ₂)]	[4 (as Cl ₂)]	1.89	1.60–2.40	2.61	2.27–2.98	2.3	1.5–2.8	No	Drinking water disinfectant added for treatment
Control of DBP precursors [TOC] (ppm)	2012	TT	NA	NA	NA	1.6	1.3–2.1	TT	TT	No	Various natural and man-made sources
Fluoride (ppm)	2012	2.0	1	NA	NA	0.14	NA	0.8	0.6–1.1	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Beta Particle Activity ¹ (pCi/L)	2012	50	(0)	NA	NA	ND	NA	4	ND–6	No	Decay of natural and man-made deposits
Haloacetic Acids (ppb)	2012	60	NA	26.4	17.6–28.2	17.3	11.0–24.6	14	12–18	No	By-product of drinking water disinfection
Nitrate [as nitrate] (ppm)	2012	10	10	NA	NA	0.45	0.6–0.75	ND	ND	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Strontium-90 (pCi/L)	2012	8	0.35	NA	NA	0.093	NA	ND	ND	No	Decay of natural and man-made deposits
TTHMs [Total Trihalomethanes] (ppb)	2012	80	NA	58.7	37.4–65.4	47.8	37.1–57	45	42–48	No	By-product of drinking water disinfection
Uranium (pCi/L)	2012	20	0.43	NA	NA	ND	NA	2	1–2	No	Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2012	1.3	0.3	0.15	0/30	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2012	15	0.2	2	0/30	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

				Walnut Valley Water District		TVMWD		MWD			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2012	200	600	NA	NA	ND	NA	120	ND–210	No	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	2012	500	NS	NA	NA	83	NA	90	85–95	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2012	15	NS	NA	NA	ND	NA	1	NA	No	Naturally occurring organic materials
Odor–Threshold (TON)	2012	3	NS	NA	NA	1	NA	2	NA	No	Naturally occurring organic materials
Specific Conductance (µS/cm)	2012	1,600	NS	NA	NA	520	510–530	740	350–930	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2012	500	NS	NA	NA	39	NA	140	130–160	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2012	1,000	NS	NA	NA	315	310–320	470	450–490	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2012	5	NS	0.15	ND–2.07	0.1	NA	ND	NA	No	Soil runoff

OTHER SUBSTANCES

		TVMWD		MWD		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Alkalinity (ppm)	2012	86	78–94	95	61–120	Measure of water quality
Boron (ppm)	2012	135	130–140	130	NA	Runoff/leaching from natural deposits; industrial wastes
Calcium (ppm)	2012	28	NA	46	45–48	Measure of water quality
Chlorate (ppb)	2012	ND	NA	66	ND–80	By-product of drinking water chlorination; industrial processes
Corrosivity ² (as saturation index)	2012	0.4	NA	0.28	0.24–0.32	Elemental balance in water; affected by temperature, other factors
Corrosivity ³ (as aggressiveness index)	2012	12.22	NA	12.1	NA	Elemental balance in water; affected by temperature, other factors
Hardness (ppm)	2012	110	NA	200	80–270	Measure of water quality
Magnesium (ppm)	2012	13	NA	20	19–20	Measure of water quality
pH (Units)	2012	8.3	8.2–8.4	8.1	7.9–8.6	Measure of water quality
Potassium (ppm)	2012	2.55	2.2–2.9	3.9	3.7–4.1	Measure of water quality
Sodium (ppm)	2012	57	NA	78	74–82	Measure of water quality
Vanadium (ppb)	2012	1.55	ND–3.1	ND	NA	Naturally occurring; industrial waste discharge

¹ Effective 6/11/2006, the gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. 50 pCi/L is used as a screening level.

² SI measures the tendency for a water to precipitate or dissolve calcium carbonate (a natural mineral in water). Water with SI <-2.0 is highly corrosive and would be corrosive to almost all materials found in a typical water system. SI between -2.0 to 0 indicates a balanced water and SI >0.5 is scale forming.

³ AI measures the aggressiveness of water transported through pipes. Water with AI <10.0 is highly aggressive and would be very corrosive to almost all materials found in a typical water system. AI ≥ 12.0 indicates non-aggressive water. AI between 10.0 and 11.9 indicates moderately aggressive water.

Definitions

AL (Regulatory Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not Detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

PDWS (Primary Drinking Water Standard): MCLs and MRDLs for contaminants that affect health, along with their monitoring and reporting requirements and water treatment requirements.

PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TON (Threshold Odor Number): A measure of odor in water.