



Presented By
Livermore Municipal Water



Annual
WATER
QUALITY
REPORT

Reporting Year 2011

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Meeting the Challenge

We are once again proud to present our annual water quality report, covering all testing performed between January 1 and December 31, 2011. 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 share with us your thoughts or concerns about the information in this report. After all, well-informed customers are our best allies.

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.

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>.

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 State 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.

Where Does My Water Come From?

Since its inception, Livermore Municipal Water has received 100 percent of its wholesale water from the Zone 7 Water Agency, which treats water from the State Water Project in the Sacramento-San Joaquin Delta and groundwater wells in Pleasanton. Zone 7 is the wholesale water agency in the valley responsible for managing the potable water sources and providing either disinfected potable surface water or disinfected potable well water for the valley retail water agencies. The chart in this report includes the water quality results from Zone 7's two water treatment facilities (Del Valle and Patterson Pass) and four well fields (Hopyard, Mocho, Stoneridge, and Chain of Lakes). Livermore Municipal Water still receives most of its water from the two treatment plants, but during 2011, 16.3 percent of the total water received was from the Zone 7 wells in Pleasanton.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The Livermore City Council meets two times per month, beginning at 7 p.m. at the City Council Chambers, 3575 Pacific Avenue, Livermore, CA. Call the City Clerk at (925) 960-4200 for the exact meeting days, or the information can also be found on the city's Web site at www.cityoflivermore.net.

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.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Randy Werner, Water Supervisor, at (925) 960-8100.

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													
				Livermore Municipal Water		Del Valle Water Treatment Plant		Patterson Pass Water Treatment Plant		Mocho Well Field			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL (MRDL)	PHG (MCLG) (MRDLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppb)	2011	1,000	2,000	NA	NA	ND	NA	ND	NA	160	140–190	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (ppb)	2011	50	(100)	NA	NA	ND	NA	ND	NA	ND	NA	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2011	2	1	NA	NA	0.1	0.1–0.1	0.1	ND–0.1	0.1	ND–0.1	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids (ppb)	2011	60	NA	18.1	9.7–24.0	16	ND–27	16	ND–27	NA	NA	No	By-product of drinking water disinfection
Nitrate [as nitrate] (ppm)	2011	45	45	NA	NA	3	ND–3	ND	NA	19	12–24	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ppb)	2011	50	30	NA	NA	ND	NA	ND	NA	ND	ND–8	No	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
TTHMs [Total Trihalomethanes] (ppb)	2011	80	NA	21.4	18.0–28.5	24	ND–34	24	ND–34	NA	NA	No	By-product of drinking water disinfection
Total Coliform Bacteria [Total Coliform Rule] (# positive samples)	2011	No more than 1 positive monthly sample	(0)	1	NA	NA	NA	NA	NA	NA	NA	No	Naturally present in the environment
Turbidity¹ (NTU)	2011	TT	NA	NA	NA	0.17	ND–0.17	0.14	ND–0.14	NA	NA	No	Soil runoff

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	Stoneridge Well		Hopyard Well Field		Chain of Lakes Well Field		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Barium (ppb)	2011	1,000	2,000	250	230–270	150	120–200	270	240–300	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (ppb)	2011	50	(100)	10	ND–11	ND	NA	ND	ND–10	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2011	2	1	0.1	0.1–0.1	0.1	0.1–0.2	0.1	0.1–0.1	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids (ppb)	2011	60	NA	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
Nitrate [as nitrate] (ppm)	2011	45	45	19	16–24	15	15–16	18	14–20	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ppb)	2011	50	30	ND	NA	6	ND–7	ND	NA	No	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
TTHMs [Total Trihalomethanes] (ppb)	2011	80	NA	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
Total Coliform Bacteria [Total Coliform Rule] (# positive samples)	2011	No more than 1 positive monthly sample	(0)	NA	NA	NA	NA	NA	NA	No	Naturally present in the environment
Turbidity ¹ (NTU)	2011	TT	NA	NA	NA	NA	NA	NA	NA	No	Soil runoff

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 (ppb)	2010	1300	300	70	0/31	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2010	15	2	2.4	0/31	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

				Livermore Municipal Water		Del Valle Water Treatment Plant		Patterson Pass Water Treatment Plant		Mocho Well Field			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2011	500	NS	NA	NA	39	29–58	36	32–42	123	91–178	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2011	15	NS	NA	NA	ND	NA	1	ND–2.5	ND	NA	No	Naturally occurring organic materials
Odor–Threshold (TON)	2011	3	NS	NA	NA	1	ND–1	ND	ND–1	ND	ND–0.1	No	Naturally occurring organic materials
Specific Conductance (µS/cm)	2011	1,600	NS	NA	NA	333	219–450	253	216–280	1,146	951–1,430	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2011	500	NS	NA	NA	20	11–30	13	10–20	79	59–122	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2011	1,000	NS	NA	NA	190	123–269	145	123–161	706	572–886	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2011	5	NS	NA	NA	NA	NA	NA	NA	0.07	0.05–0.11	No	Soil runoff
Turbidity (Units)	2011	5	NS	0.138	0.060–1.020	NA	NA	NA	NA	NA	NA	No	Soil runoff
				Stoneridge Well		Hopyard Well Field		Chain of Lakes Well Field					
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		
Chloride (ppm)	2011	500	NS	62	47–86	78	57–89	62	49–74	No	Runoff/leaching from natural deposits; seawater influence		
Color (Units)	2011	15	NS	ND	NA	ND	NA	ND	NA	No	Naturally occurring organic materials		
Odor–Threshold (TON)	2011	3	NS	ND	NA	ND	NA	ND	NA	No	Naturally occurring organic materials		
Specific Conductance (µS/cm)	2011	1,600	NS	747	666–866	945	793–1,030	727	629–816	No	Substances that form ions when in water; seawater influence		
Sulfate (ppm)	2011	500	NS	38	34–44	67	44–79	38	32–43	No	Runoff/leaching from natural deposits; industrial wastes		
Total Dissolved Solids (ppm)	2011	1,000	NS	457	400–557	574	489–618	438	386–504	No	Runoff/leaching from natural deposits		
Turbidity (NTU)	2011	5	NS	0.07	0.05–0.12	0.18	0.05–0.44	0.11	0.05–0.33	No	Soil runoff		
Turbidity (Units)	2011	5	NS	NA	NA	NA	NA	NA	NA	No	Soil runoff		

UNREGULATED AND OTHER SUBSTANCES

				Livermore Municipal Water		Del Valle Water Treatment Plant		Patterson Pass Water Treatment Plant		Mocho Well Field			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Sodium (ppm)	2011	NA	NA	35	26–46	30	25–34	80	52–129	Runoff/leaching from natural deposits			
Total Hardness as calcium carbonate (ppm)	2011	NA	NA	89	42–159	50	39–64	462	402–595	Erosion of natural deposits			
				Stoneridge Well		Hopyard Well Field		Chain of Lakes Well Field					
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Sodium (ppm)	2011	49	43–59	63	39–79	31	23–38	Runoff/leaching from natural deposits					
Total Hardness as calcium carbonate (ppm)	2011	135	125–153	394	364–410	325	278–369	Erosion of natural deposits					

¹Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

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.

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.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

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sql SELECT DocumentID, FileLocation, FileName, FolderID, OnDisc, ModuleID, ContentType,  
Coalesce(Size,0) as Size, DownloadSpecID, Type FROM fbvDocumentAllBlobNames b LEFT OUTER JOIN  
cvtContentTypes c ON b.contenttype = c.contentID WHERE BlobID='6627'
```