



ANNUAL  
WATER  
QUALITY  
REPORT

*Water testing performed in 2005*

*Proudly Presented By:*



City of Vallejo System,  
CA4810007  
City of Vallejo Lakes System,  
CA4810021

VJ000001

## A Message From the Environmental Protection Agency

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.

Contaminants that may be present in source water include:

- Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
- Pesticides and Herbicides, which 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; and
- Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

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 Health Services (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, which 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. 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.

## Continuing Our Commitment

Once again, we proudly present our annual water quality report. This edition covers all testing completed from January through December 2005. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call Nancy Dodsworth, City of Vallejo, Laboratory Chemist, at (707) 649-3472.

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The Vallejo City Council meets on various Tuesdays throughout the year at 7:00 p.m. at 555 Santa Clara Street, Vallejo. You may call the City Clerk at (707) 648-4527 for specific meeting dates.

## 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The USEPA/Centers for Disease Control (CDC) 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.





## How Is My Water Treated?

The City of Vallejo Water System

provides treated water from the Fleming Hill Water Treatment Plant, a conventional treatment plant with a daily capacity of 42 million gallons. The treatment process involves a series of steps beginning with adding ozone to the water, which aids in downstream processes. Then the water travels to mixing basins, where we add coagulants to help settle out the majority of suspended particles. After this process, known as coagulation, flocculation, and sedimentation, we add ozone again, which disinfects and removes color, taste, and odor. At this point, the water is filtered through granular activated carbon and sand so that it meets strict standards for clarity. Next, chlorine is added to disinfect the water supply and caustic soda is added to adjust the pH and alkalinity. Once fluoride is added to help prevent tooth decay, the water is ready for delivery.

The Lakes Water System delivers water treated at the Green Valley Water Treatment Plant, which produces 1 million gallons per day. This conventional treatment plant uses alum and polymer to promote coagulation, flocculation, and sedimentation. After settling removes the majority of particles, the water flows through gravity filters consisting of anthracite and sand in order to meet clarity standards. The last step adds chlorine as a disinfectant. This treatment plant does not add fluoride to the water supply.



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

*Ang ulat na ito ay nagtataglay ng mahalagang inpormasyon. Kung kayo ay may tanong o nangangailangan ng karagdagang kaalaman ukol sa ulat na ito sa wikang Pilipino, mangyari lamang na tawagan si Jun Malit sa telepono (707) 648-4309.*

## Table Definitions

**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 level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by the U.S. EPA.

**NA:** Not applicable

**ND:** Not detected

**NS:** No standard

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water.

**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).

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

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

**umhos/cm (micromhos per centimeter):** A measure of electrical conductance.

## About Our Violations

The following notice only applies to customers in the Lakes Water System and these customers have received notices throughout the year. We anticipate that a new pre-treatment process at the Green Valley Water Treatment Plant will bring the drinking water into compliance in 2006.

During 2005, the Lakes Water System water did not meet the drinking water standard for total organic carbon removal and exceeded the maximum contaminant level (MCL) for disinfection by-products known as trihalomethanes (THMs). Total organic carbon has no health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes and haloacetic acids. Some people who drink water containing these by-products in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.



## Sampling Results

During the past year we have taken thousands of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. Although the majority of substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less than once a year because their concentration does not change frequently. In these cases, we've provided the most recent results, including the year the monitoring occurred.

### Primary Drinking Water Standard (Regulated In Order To Protect Against Possible Adverse Health Effects)

SUBSTANCE (UNITS)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	City of Vallejo System		Lakes Water System		VIOLATION	TYPICAL SOURCE
				AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH		
<b>Aluminum</b> (ppb)	2005	1000	600	73	73-73	110	110-110	No	Erosion of natural deposits; residue from some surface water treatment processes
<b>Chlorine</b> (ppm)	2005	[4.0 (as Cl <sub>2</sub> )]	[4 (as Cl <sub>2</sub> )]	0.79	ND-2.18	0.36	ND-1.41	No	Drinking water disinfectant added for treatment
<b>Fluoride</b> (ppm)	2005	2.0	1	1.04 <sup>1</sup>	0.09-1.48	0.1	0.1-0.2	No	Water additive which promotes strong teeth
<b>Gross Alpha Particle Activity</b> (pCi/L)	2002	15	(0)	ND	ND-4.11	ND	ND-4.11	No	Erosion of natural deposits
<b>Haloacetic Acids [HAAs]</b> (ppb)	2005	60	NA	11	4.4-22	60	ND-130	No	By-product of drinking water disinfection
<b>Nitrate [as NO<sub>3</sub>]</b> (ppm)	2005	45	45	ND	ND-2.6	ND	ND-2	No	Runoff and leaching from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Total Coliform Bacteria</b> (% positive samples)	2005	5% positive monthly samples	(0)	ND	ND-0.6%	ND	NA	No	Naturally present in the environment
<b>Total Organic Carbon [TOC]</b> (% removal ratio)	2005	TT ≥ 1	NA	2.2	1.3-2.6	<b>0.62</b>	<b>ND-2.1</b>	<b>Yes<sup>2</sup></b>	Various natural and manmade sources
<b>Trihalomethanes [THMs]</b> (ppb)	2005	80	NA	46	21-88	<b>130</b>	<b>72-155</b>	<b>Yes<sup>2</sup></b>	By-product of drinking water chlorination
<b>Turbidity</b> (NTU) <sup>3</sup>	2005	TT ≤ 0.3	NA	0.05	0.02-0.10	0.02	0.01-0.09	No	Soil runoff

### Tap water samples were collected for lead and copper analyses from homes throughout the two service areas

SUBSTANCE (UNITS)	YEAR SAMPLED	RAL	PHG	City of Vallejo System		Lakes Water System		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED (90th% TILE)	HOMES ABOVE RAL/ TOTAL HOMES SAMPLED	AMOUNT DETECTED (90th% TILE)	HOMES ABOVE RAL/ TOTAL HOMES SAMPLED		
<b>Copper</b> (ppb)	2003	1,300	170	61 <sup>4</sup>	0/50	65 <sup>5</sup>	0/13	No	Internal corrosion of household plumbing systems

## Secondary Drinking Water Standard (Regulated In Order To Protect The Odor, Taste And Appearance Of Drinking Water)

SUBSTANCE (UNITS)	YEAR SAMPLED	SMCL	PHG (MCLG)	City of Vallejo System		Lakes Water System		VIOLATION	TYPICAL SOURCE
				AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH		
<b>Aluminum</b> (ppb)	2005	200	NS	73	73-73	110	110-110	No	Erosion of natural deposits; residual from some surface water treatment processes
<b>Chloride</b> (ppm)	2005	500	NS	14.8	9.5-26	21.2	13.6-35	No	Runoff/leaching from natural deposits; seawater influence
<b>Odor--Threshold</b> (Units)	2005	3	NS	1.4	1.0-2.0	1.3	1.0-2.0	No	Naturally occurring organic materials
<b>Specific Conductance</b> (µmhos/cm)	2005	1,600	NS	362	254-520	300	158-439	No	Substances that form ions when in water; seawater influence
<b>Sulfate</b> (ppm)	2005	500	NS	41.4	28.5-81.2	21.2	7.1-51.7	No	Runoff/leaching from natural deposits; industrial wastes
<b>Total Dissolved Solids [TDS]</b> (ppm)	2005	1,000	NS	226	159-325	191	99-352	No	Runoff/leaching from natural deposits

## Additional Constituents Analyzed

SUBSTANCE (UNITS)	YEAR SAMPLED	City of Vallejo System		Lakes Water System		TYPICAL SOURCE
		AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	
<b>Boron</b> (ppm)	2005	0.13	0.13-0.13	NA	NA	Natural minerals
<b>Calcium</b> (ppm)	2005	23.9	13.8-34.9	19.2	4.8-57	Natural minerals
<b>Hardness as CaCO<sub>3</sub></b> (ppm) <sup>6</sup>	2005	137	82-188	111	23-158	Natural minerals
<b>Magnesium</b> (ppm)	2005	18.9	8.7-27.5	15.8	2.7-23.6	Natural minerals
<b>Sodium</b> (ppm)	2005	18	18-18	18	18-18	Natural minerals

**Footnotes:**

- <sup>1</sup> To be in compliance, 80% of measurements must be within the range of 0.8-1.4 ppm. The water met this standard.
- <sup>2</sup> Violations occurred only in the Lakes Water System. Refer to the article "About Our Violations".
- <sup>3</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. For compliance, 95% of samples must be ≤ 0.3. In 2005, 100% of all samples taken met this standard.
- <sup>4</sup> The City of Vallejo Water System needs to test for lead and copper again this summer, since we are required to repeat this study every three years. City staff will call upon customers that helped us in the past by taking water samples from their home plumbing system. The City of Vallejo thanks all customer volunteers for helping us prove that the drinking water does not leach unsafe levels of lead or copper from home plumbing.
- <sup>5</sup> Sampled in 2005
- <sup>6</sup> To determine hardness as grains per gallon, divide the amount by 17.1.