

There's never been a better time than now to save water



#### Water-Wise House Calls

Call us to schedule a weekday appointment for one of our water-use specialists to come to your home and analyze your indoor and outdoor water use. Our trained specialist will provide suggestions, rebate information, low-flow devices (if needed) and an irrigation schedule for your lawn. Call 774-5761 to schedule your appointment today.

#### Pool Cover Rebates

##### Up to \$200

Save water and keep your pool clean by installing a pool cover. Customers can receive a \$50 rebate, or 50 percent of the purchase price of a pool cover, whichever is less. Or get up to a \$200 rebate if a permanent mechanical pool cover is installed.

#### High Efficiency Toilet Rebates

##### Up to \$175

Receive a rebate for replacing your older (pre-1992), non-conserving toilet with a new high-efficiency model.

For more information on these water saving programs and rebates go to [www.roseville.ca.us/savewater](http://www.roseville.ca.us/savewater) or give us a call at 774-5761.



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

# Water Quality Report 2008

Environmental Utilities-Water



## Drinking Water

The City of Roseville is pleased to present you with this annual report on City provided drinking water. As in past years, compliance with all state and federal regulations regarding water quality have been met or exceeded by the water provided. The safety and protection of the water system also continues as a top priority, with vulnerability assessment and security measures being implemented on an ongoing basis.

Under the guidelines provided by the U.S. Environmental Protection Agency (EPA) and the California Department of Public Health (State), the City of Roseville monitors and tests the drinking water from source to tap. The information provided in this report is for the water provided January through December 2008, and includes details about where your water comes from, what it contains, and how it compares to the standards set by the regulatory agencies.

We hope this report will provide the answers to any questions you may have about the drinking water supplied by the City of Roseville. Additional information may be obtained by contacting the Roseville Water Treatment Plant at 916-791-4586, or through the city website at [www.roseville.ca.us/eu](http://www.roseville.ca.us/eu).

### General Water Source

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 2008, two types of water sources were used in Roseville, surface and ground.

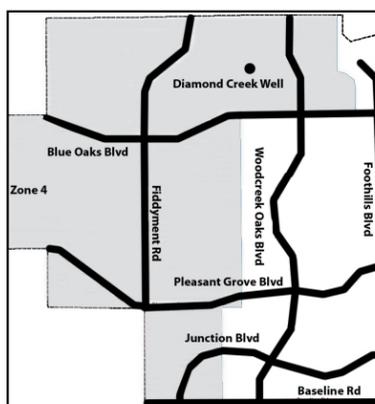
### Roseville Surface Water

The surface water source from Folsom Lake is snow melt water that originates in the Sierra Nevada Mountains. The melting snow flows into the north, middle, and south forks of American River and is ultimately stored in Folsom Lake.

The Folsom Lake water is conveyed to and treated at Roseville's 100 million gallon per day water treatment plant. The treatment process consists of coagulation, sedimentation, filtration and disinfection.

The pH of the water is increased to control corrosion in the distribution system and fluoride is added to help prevent tooth decay in consumers. Fluoridation has been a part of the water supply in Roseville since the 1950's.

### Roseville Groundwater Source



On July 17, 2007, Diamond Creek Well was put into operation and the water pumped from the well was served to the City's customers until February 28, 2008. Since that day, the only water source provided to Roseville customers was surface water. The

operation of Diamond Creek Well is important because it will provide added water reliability to Roseville's customers in case of droughts and other water supply challenges facing California. This innovative technology, Aquifer Storage and Recovery (ASR), stores treated Folsom Lake water into the ground for retrieval at a later date when the water is needed. Over time the surface water blends with groundwater but it is still safe for domestic uses. Groundwater is rain and snow that soaks through the ground and continues to move downward through pore (small openings) space in the soil until it reaches the aquifer under the city. The well water meets all water quality and health standards just like treated surface water. Well water does have aesthetic difference and sometimes is noticeable to some consumers. Groundwater is an important water resource in California. Two-thirds of the Californians along with half of all Americans (more than 95 percent for rural Americans) get their household water supplied from groundwater. This source was delivered to a small portion of customers in Roseville (see gray area on map above).

Roseville maintains a water distribution system covering the entire city with pipelines ranging in size from four inches to over five feet in diameter. Water samples are collected throughout the system and tested on a weekly basis to ensure quality maintained during delivery to customers.

## Source Water Assessment

In 2008, the City of Roseville completed a source water assessment on our water supply from Folsom lake to determine if there were any potentially contaminating activities present. The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply: Folsom Lake State Recreation Area facilities (marina, restrooms, recreational areas, parking lots, and storm drains) and residential sewer and septic systems.

The source is also considered vulnerable to the following activities not associated with any detected contaminants: illegal activities and dumping, fertilizer, pesticide and herbicide application, and high-density housing developments.

In August 2003, the City of Roseville completed a source water assessment on Diamond Creek well to determine if there were any potentially contaminating activities present. There have been no contaminants detected in the water supply for the Diamond Creek well; however, the well is still considered vulnerable to activities located near the water source. The source is considered most vulnerable to the following activities not associated with any detected contaminants: sewer collection systems and chemical/petroleum processing/storage.

## Public Participation

The Environmental Utilities Department routinely reports at the City of Roseville Public Utility Commission meetings held on the fourth Tuesday of each month at 7 p.m. in the City of Roseville Council Chambers. The public is welcome to attend.

For additional information about the City of Roseville, please visit our Website [www.roseville.ca.us/eu](http://www.roseville.ca.us/eu). If you would like to have more information on items related to water quality issues visit the EPA Website ([www.epa.gov/safewater/hfacts.html](http://www.epa.gov/safewater/hfacts.html)) or the California Department of Health Website ([www.dhs.ca.gov/ps/ddwem/default.htm](http://www.dhs.ca.gov/ps/ddwem/default.htm)).



## Results of Monitoring for Primary Drinking Water Standards

Substance	MCL	PHG [MCLG]	Folsom Lake Avg. not detected	Folsom Lake Rng.	DC Well Avg.	DC Well Rng. (1)	Sample Date Lake/Well	Violation	Typical Source
Flouride - natural (ppm)	2.0	1	not detected	-	0.175	0.1 - 0.25	2008/2008	No	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Flouride - added (2) (ppm)	2.0	1	0.80	0 - 1.93	0.70	0 - 1.60	2008/2008	No	Water additive which promotes strong teeth
Turbidity (3) (ntu)	TT = 1 ntu	N/A	0.06	0.02 - 0.35	0.315	0.31 - 0.32	2008/2008	No	Soil runoff
Total Coliform Bacteria (4) (%)	>5%	(0)	not detected	-	not detected	not detected	2008/2008	No	Naturally present in the environment
Arsenic (ppb)	10	0.004	not detected	-	3	3	2008/2008	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	1	2	0.014	-	0.079	0.074 - 0.083	2008/2008	No	Erosion of natural deposits; discharge of oil drilling wastes and from metal refineries
Nitrate (ppm)	45	45	not detected	-	5.6	5.2 - 6.0	2008/2008	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Total Trihalomethanes (ppb)	80	N/A	13	-	6.9	5.8 - 8.0	2008/2008	No	Byproduct of drinking water chlorination

## Results of Monitoring for Secondary Drinking Water Standards (5)

Substance	MCL	PHG [MCLG]	Folsom Lake Avg.	Folsom Lake Rng.	DC Well Avg. not detected	DC Well Rng. (1)	Sample Date Lake/Well	Violation	Typical Source
Odor (units)	3	none	1	-	not detected	-	2008/2007	No	Naturally occurring organic matter
Total Dissolved Solids (ppm)	1000	none	52	-	429	428-430	2008/2008	No	Runoff/leaching from natural deposits Substances that form ions when in water; seawater influence
Specific Conductance (uS/cm)	1600	none	86	-	679	671-686	2008/2008	No	Substances that form ions when in water; seawater influence
Chloride (ppm)	500	none	4.2	-	153	147-158	2008/2008	No	Runoff/leaching from natural deposits; seawater influence
Sulfate (ppm)	500	none	7.1	-	26	25 - 26	2008/2008	No	Runoff/leaching from natural deposits; industrial wastes

## Additional Monitoring Results

Substance	MCL	PHG [MCLG]	Folsom Lake Avg.	Folsom Lake Rng.	DC Well Avg.	DC Well Rng. (1)	Sample Date Lake/Well	Violation	Typical Source
Alkalinity (ppm)	none	none	28	18 - 38	58	57-59	2008/2008	No	Runoff/leaching from natural deposits
Bicarbonate (ppm)	none	none	28	-	58	-	2008/2008	No	Runoff/leaching from natural deposits
Calcium (ppm)	none	none	8.9	-	33	32 - 34	2008/2008	No	Runoff/leaching from natural deposits
Hardness (ppm)	none	none	29.2	-	151	146-155	2008/2008	No	Runoff/leaching from natural deposits, generally found in ground and surface waters
Magnesium (ppm)	none	none	1.7	-	16.5	16 - 17	2008/2008	No	Runoff/leaching from natural deposits
pH (pH units)	none	none	7.6	-	7.15	7.1 - 7.2	2008/2008	No	
Sodium (ppm)	none	none	4.9	-	73	72-74	2008/2008	No	Runoff/leaching from natural deposits, generally found in ground
Silica (ppm)	none	none	not sampled	-	76.6	74.2 - 79	2007	No	Runoff/leaching from natural deposits
Total Organic Carbon (ppm)	none	none	1.2	0.8 - 1.5	0.7	0.6 - 0.8	2008/2008	No	Various natural and man-made sources

## Results of Monitoring Lead and Copper from 62 Sample Sites

Substance	Action Levels	PHG	90th Percentile (level detected)	No. of sites exceeding AL	Sample Date	Violation	Typical Source
Copper (ppm)	1.3	0.17	0.038	0	2008	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Lead (ppb)	15	2	0.99	0	2008	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

## Results of Monitoring for Disinfection Byproducts and Disinfectant in the Distribution System

Substance	MCL or [MRDL] or {AL}	PHG [MCLG]	City Average	Range	Sample Date	Violation	Typical Source
Total Trihalomethanes (ppb)	80	none	36	10 - 72	2008	No	Byproduct of drinking water disinfection
Haloacetic Acids 5 (ppb)	60	none	21	Non-detected - 35	2008	No	Byproduct of drinking water disinfection
Chlorine (ppm)	[4.0]	[4]	0.76	Trace - 1.19	2008	No	Drinking water disinfectant added for treatment

## What Is In The Water?

Last year, as in years past, your tap water met all EPA and State drinking water health standards. Roseville vigilantly safeguards its water supplies and once again we are proud to report that our system has never violated a maximum contaminant level or any other water quality standard. This brochure is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State Standards. We are committed to providing you with information because informed customers are our best allies.

## Terms & Abbreviations Used In This Report

Definitions (MCL, PHG, MCLG, primary drinking water standard):

- AL (regulatory Action Level):** the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum Contaminant Level (MCL):** 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 are set to protect the odor, taste, and appearance of drinking water.
- Maximum Contaminant Level Goal (MCLG):** 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. Environmental Protection Agency.
- MRDL (Maximum Residual Disinfectant Level):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap. MRDLs are set by U.S. EPA.
- 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. MRDLGs are set by the U.S. EPA.
- ntu:** Nephelometric Turbidity Units, a measurement of the clarity of water.
- Public Health Goal (PHG):** 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 Environmental Protection Agency.
- Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.
- Primary Drinking Water Standards:** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- Secondary Drinking Water Standards:** Limits for substances that may affect consumer acceptance of water, but are not otherwise harmful. Secondary MCLs are set to address the taste, odor, and appearance of drinking water.
- TT (treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

## Things You Should Know About Drinking Water

- Potential health effects**  
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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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. 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 (1-800-426-4791).

- What you should know about Cryptosporidium**  
Cryptosporidium is a microbial pathogen found in most surface waters. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. The City of Roseville tests for Cryptosporidium in the untreated water from Folsom Lake once each month. During 2005, Cryptosporidium was detected during the January monitoring event at a level of 0.09 Cryptosporidium/Liter and during the August monitoring event at a level of 0.1 Cryptosporidium/Liter. Current tests methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their health care provider regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

- Other contaminant sources**
- 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 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, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

## Footnotes

- (1) Data presented in the Diamond Creek Well Range column may include analytical results that are from non-drinking water analytical methods and are not used for drinking water compliance monitoring. They are listed for reference purpose. Not all data points listed are used to calculate the Diamond Creek Well Average.
- (2) Fluoride is added in order to help prevent dental caries. The optimal fluoride level is 0.8 ppm.
- (3) For turbidity the lowest and highest single measurements are reported as the range. The average of the monthly turbidities is reported as the average. Turbidity is a measurement of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. All but one turbidity sample collected were below 0.45 ntu.
- (4) For Total Coliform Bacteria the highest percentage of positive samples collected in any month is reported as the average. The MCL is 5% of monthly samples are positive. Coliforms are bacteria that are naturally present in the environment and are used as indicators that other, potentially harmful, bacteria may be present.
- (5) There are no PHGs, MCLGs, or mandatory standard health effects language for constituents with secondary drinking water standards because secondary MCLs are set on the basis of aesthetics.