



ANNUAL
**WATER
QUALITY
REPORT**

Water testing performed in 2007



CITY OF DAVIS
PUBLIC WORKS

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To Our Water Customers:

This report is prepared in accordance with the U.S. Environmental Protection Agency and the State of California regulations under the Safe Drinking Water Act (SDWA) that requires water utilities to provide annual water quality information to their customers. This publication includes the analytical results taken during calendar year 2007 and some taken from earlier years, information about your water source, what it contains, how it compares to state and federal standards, and other related information.

The number reported in the table as weighted average is based on the most recent water analysis from each well that delivered water into the system during 2007. Only constituents that were detected are reported in this publication.



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.

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 drinking water may be obtained by calling the U.S.E.P.A.'s Safe Drinking Water Hotline at 800.426.4791.

Source Water Assessment

A source water assessment for the City of Davis was completed in 2002 as required by the California Department of Health Services Source Water Assessment Program. The goal of this project was to determine the water system's vulnerability to possible sources of contamination. Our groundwater is most vulnerable to historic and present-day land use activities. These activities include agricultural and light industrial use. Additionally, the water source is vulnerable to naturally occurring contaminants such as selenium and chromium. Overall, there is a slight to moderate threat that the City's water source could become contaminated by these land use patterns and activities. A copy of the complete assessment is available online at <http://swap.ice.ucdavis.edu/TSinfo/TSintro.asp>, or contact Marie Graham at (530) 757-5686 or e-mail mgraham@cityofdavis.org.

THIS REPORT IS OUR STATEMENT
OF COMPLIANCE WITH THE SAFE
DRINKING WATER ACT

Where Does Our Water Come From?

During 2007, the City pumped water from 20 municipal wells and one private well. These wells tap into aquifers beneath the city at depths from 210 to 1,730 feet below ground surface. The water is filtered naturally by sands and clays as it passes through the geologic formation.

Community Participation

The City conducts public meetings and workshops concerning various water issues. The City Council receives public comments at their regular meetings as does the Natural Resources Commission. Please check the city web site at www.cityofdavis.org for the schedule of meetings or for more water information.



Water Treatment Process

Our water supply is pumped from underlying aquifers and into our distribution system. The only treatment the groundwater receives is an injection of a 12% liquid sodium hypochlorite at the well head. We target a 0.3 parts per million dosage prior to distribution. Precautions should be taken when using chlorinated water for medical uses such as in dialysis machines or when adding water to fish tanks or ponds. No fluoride is added to the water.

In late 2007, the City installed a surface treatment facility at Well 29 located on Alhambra Drive. It is an activated carbon absorption filter that treats the groundwater before it is chlorinated and delivered into the distribution system.

Contact Us

For more information about this report, or for any questions relating to your drinking water, please call us at 530.757.5686 and ask for Marie Graham or Dianna Jensen. You may also e-mail us at mgraham@cityofdavis.org or djensen@cityofdavis.org or visit our web site at www.cityofdavis.org. If you ever have a problem with your water supply after usual working hours, please call the non-emergency police number at 530.747.5400 (land line) or 530.758.3600 (cell phone).

Radon

Radon is a radioactive gas that occurs naturally in some groundwater. It may pose a health risk when the gas is released from water into air, as occurs during showering, bathing, or washing dishes and clothes. Radon gas released from drinking water is a relatively small part of the total radon in air. Radon is released into homes and groundwater from soil. Inhalation of radon gas has been linked to lung cancer; however, the effects of radon ingested in drinking water are not yet clear. Samples taken from our wells during 2005 indicated an average radon concentration of 312 Picocuries per Liter (pCi/L). If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information call (800) SOS-RADON.



Additional Monitoring

This year, the City submitted source water from all municipal wells for radioactivity analysis. This sampling was done to comply with the U.S. EPA Radionuclide Rule. None of the wells exceeded the Maximum Contaminant Level (MCL). The City will continue to monitor for radioactive constituents as necessary.

What Does Our Water Contain?

During the past year we have taken several water samples in order to determine the presence of any biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. 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 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	PHG (MCLG)	WEIGHTED AVERAGE	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2007	10	0.004	4.5	<2.0–6.1	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2007	1	2	<0.1	<0.1–0.18	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (ppb)	2007	50	(100)	17	2–38	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Combined Radium (pCi/L)	2007	5	(0)	0.60	-0.102–2.02	No	Erosion of natural deposits
Fluoride ¹ (ppm)	2007	2.0	1	0.20	<0.1–0.31	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2007	15	(0)	2.4	0.66–7.37	No	Erosion of natural deposits
Haloacetic Acids (ppb)	2007	60	NA	<0.5	<0.50–1.4	No	By-product of drinking water disinfection
Nickel (ppb)	2007	100	12	<10	<10–11	No	Erosion of natural deposits; discharge from metal factories
Nitrate [as nitrate] (ppm)	2007	45	45	13	<1–50	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ppb)	2007	50	(50)	7.4	<1.0–34	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)	2007	80	NA	<0.50	<0.50–4.0	No	By-product of drinking water chlorination
Uranium (pCi/L)	2007	20	0.43	3.8	1.07–6.66	No	Erosion of natural deposits

Tap water samples were collected from 30 sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2005	1.3	0.17	0.29	0	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2005	15	2	2.5	0	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	WEIGHTED AVERAGE	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2007	200	NS	<50	<50–360	No	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	2007	500	NS	44	12–160	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2007	15	NS	<1.0	<1.0–10	No	Naturally-occurring organic materials
Copper (ppm)	2007	NA	NS	<50	<50–57.0	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Iron ² (ppb)	2007	300	NS	<100	<100–1,200	Yes	Leaching from natural deposits
Manganese ² (ppb)	2007	50	NS	17.5	<10–61	Yes	Leaching from natural deposits
Specific Conductance (µS/cm)	2007	1,600	NS	841	460–1,400	No	Substances that form ions when in water
Sulfate (ppm)	2007	500	NS	64	23–260	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2007	1,000	NS	511	290–990	No	Runoff/leaching from natural deposits
Turbidity (Units)	2007	5	NS	<0.5	<0.5–2.1	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	WEIGHTED AVERAGE	RANGE LOW-HIGH	TYPICAL SOURCE
Alkalinity (ppm)	2007	342	210–520	NA
Boron (ppb)	2007	754	510–1,100	Erosion of natural deposits
Bromoform (ppb)	2007	<0.50	<0.50–1.9	By-product of water chlorination
Calcium (ppm)	2007	33	16–61	Erosion of natural deposits
Carbonate (ppm)	2007	4.3	2–19	
Chloroform (ppb)	2007	<0.50	<0.50–1.2	By-product of water chlorination
Hardness (ppm)	2007	306	67–650	Reported as Calcium Carbonate
m,p-Xylenes (ppb)	2007	<0.5	<0.5–0.8	
Magnesium (ppm)	2007	54	7–120	Erosion of natural deposits
pH	2007	8.3	8.1–8.6	
Potassium (ppm)	2007	0.7	<1.0–3	Erosion of natural deposits
Sodium (ppm)	2007	79	44–100	Erosion of natural deposits

¹Fluoride is not added to our drinking water.

²Three of our production wells contain concentrations of Manganese that exceed the state's SMCL. Also, one of our wells has an Iron concentration that exceeds the SMCL. This is considered an aesthetic problem, not a health problem, because high levels of manganese and/or iron may cause discolored water or stain plumbing fixtures.

Definitions

Action Level (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.

NA: Not applicable

NS: No standard

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).