



City of Davis 2010 Annual Water Quality Report

What Does Our Water Contain?

Under the Title 22 California Code of Regulations, all public water systems are required to sample their source water and treated water for the presence of specific biological, inorganic, organic, and radioactive constituents. A public water system, such as the City's, is required to sample its source water every three years; if a constituent was not tested in 2010, the most recent result for that constituent is included. Only those constituents that were detected during routine sampling events are listed below as required by the California Code of Regulations under Title 22. The City entered into an agreement with the University to purchase ground water from their distribution system. Included in this report are the most recent analytical results for the wells that supplied water to the City. The University wells were sampled in 2008.

DETECTION OF A CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD	UNITS	REGULATORY LIMITS		CITY OF DAVIS GROUNDWATER		UC DAVIS GROUNDWATER		POTENTIAL SOURCE OF CONSTITUENT
		MCL [MRDL]	PHG or (MCLG) [MRDLG]	RANGE DETECTED	WEIGHTED AVERAGE	RANGE DETECTED	AVERAGE	
Aluminum	ppb	1000	600	ND - 140	ND	ND	ND	Erosion from natural deposits
Arsenic	ppb	10	0.004	ND - 7.1	5.1	2.6 - 5.3	4.3	Erosion from natural deposits
Barium	ppb	1000	2000	ND - 220	68	ND - 75	ND	Erosion from natural deposits
Total Chromium	ppb	50	(100)	ND - 40	14	ND - 24	9.5	Erosion from natural deposits
Fluoride	ppm	2	1	ND - 0.32	0.19	0.11 - 0.15	0.13	Erosion from natural deposits
Nitrate (as NO ₃)	ppm	45	45	ND - 39	13	1.8 - 5.0	3.4	Runoff from fertilizer use, leaching from septic tanks and sewage, erosion from natural deposits
Selenium	ppb	50	30	ND - 52	6.4	ND - 4.7	2.8	Erosion from natural deposits
ORGANIC AND INORGANIC COMPOUNDS								
Antimony	ppb	6	20	ND	ND	ND - 2.6	ND	Discharge from petroleum refineries, fire retardants, ceramics, electronics and solder
Bromoform	ppb	80	NS	ND - 0.80	ND	ND - 0.51	ND	By-product of water chlorination
Chloroform	ppb	80	NS	ND - 1.6	ND	ND	ND	By-product of water chlorination
Perchlorate	ppb	6	6	ND - 3.0	ND	ND	ND	Chemical used in solid rocket propellant, fireworks, explosives, and a variety of other uses
RADIOACTIVE CONSTITUENTS (CITY OF DAVIS SAMPLED IN 2007, UC DAVIS SAMPLED IN 2006)								
Gross Alpha	pCi/L	15	(0)	0.17 - 5.49	2.3	0.085 - 0.98	0.63	Erosion from natural deposits
Radium - 228	pCi/L	5	(0.019)	ND - 2.02	0.5	0.01 - 0.09	0.05	Erosion from natural deposits
Radium - 226	pCi/L	5	(0.05)	ND - 0.0839	ND	0.14 - 0.78	0.45	Erosion from natural deposits
Uranium	pCi/L	20	0.43	0.10 - 5.09	4.1	No Data	No Data	Erosion from natural deposits
SAMPLED FROM THE DISTRIBUTION SYSTEM								
DISINFECTION BY-PRODUCTS								
Total Trihalomethanes	ppb	80	NS	ND - 0.68	ND	ND	ND	By-product of water chlorination
Total Haloacetic Acids	ppb	60	NS	ND - 1.4	ND	ND	ND	By-product of water chlorination
Chlorine (free)	ppm	[4]	[4]	0.01 - 0.66	NA	0.32 - 1.68	NA	By-product of water chlorination
MICROBIOLOGICAL RESULTS								
Total Coliform Bacteria	% POSITIVE	MCL	MCLG	SAMPLES COLLECTED	SAMPLES COLLECTED	POTENTIAL SOURCE OF CONSTITUENT		
	1.1 %	5%	(0%)	939	538 sampled in year 2010, 1.5% tested positive. 46 sampled in Jan. 2010, 8% tested positive.	Naturally present in the environment		
DETECTION OF A CONSTITUENT WITH A SECONDARY DRINKING WATER STANDARD								
Aluminum	ppb	200	600	ND - 140	ND	ND	ND	Erosion from natural deposits
Chloride	ppm	500	NS	15 - 160	51	14 - 36	22	Erosion from natural deposits
Color	Units	15	NS	ND - 10	4.0	ND	ND	Naturally occurring organic materials
Copper	ppb	500	NS	ND - 84	ND	ND	ND	Erosion from natural deposits
Iron	ppb	300	NS	ND - 230	ND	ND - 50	ND	Erosion from natural deposits
Manganese	ppb	50	NS	ND - 49	18	ND	ND	Erosion from natural deposits
Specific Conductance	µmhos/cm	1600	NS	500 - 1600	898	510 - 610	540	Substances that form ions when in water
Sulfate	ppm	500	NS	26 - 280	80	28 - 50	36	Erosion from natural deposits
Total Dissolved Solids	ppm	1000	NS	280 - 1000	520	310 - 360	323	Erosion from natural deposits
Turbidity	Units	5	NS	ND - 1.0	ND	ND - 0.23	0.16	Naturally occurring
Zinc	ppb	5000	NS	ND - 130	ND	ND	ND	Erosion from natural deposits
DAVIS WATER (SAMPLED IN 2010) / UC DAVIS WATER (SAMPLED IN 2008)								
DETECTION OF A CONSTITUENT WITHOUT A DRINKING WATER STANDARD	UNIT	DAVIS WATER (SAMPLED IN 2010)		UC DAVIS WATER (SAMPLED IN 2008)		POTENTIAL SOURCE OF CONSTITUENT		
		RANGE DETECTED	WEIGHTED AVERAGE	RANGE DETECTED	AVERAGE			
Alkalinity	ppm	220 - 540	343	210 - 220	213			
Bicarbonate	ppm	250 - 660	410	190 - 210	203			
Boron	ppb	520 - 1100	783	No Data	No Data			
Calcium	ppm	16 - 66	34	16 - 19	17			
Carbonate	ppm	ND - 9	4.5	7 - 9	8.2			
Chromium 6	ppb	ND - 40	13	No Data	No Data			
Hardness	ppm	69 - 640	303	100 - 140	123			
Potassium	ppm	ND - 3	0.7	ND - 2.4	1.2			
Magnesium	ppm	7 - 120	54	15 - 22	19			
Sodium	ppm	52 - 110	84	65 - 76	70			
pH		8.2 - 8.5	8.3	8.4	8.4			

Definitions

- AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- 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.
- 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):** The standard unit for turbidity measurements.
- 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).
- SMCL (Secondary MCL):** SMCLs are set to protect the odor, taste, and appearance of drinking water.
- µS/cm (microsiemens per centimeter):** A unit expressing the amount of electrical conductivity of a solution.

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 a weighted average Radon concentration of 331 Pico Curies 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 the U.S. EPA's radon hotline at 1-800-SOS-RADON or call the State's radon program at 1-800-745-7236 or visit www.epa.gov/radon/hotlines.html.

Lead and Copper Rule

Tap water samples were collected from 23 Davis homes in 2008 and analyzed for lead and copper. While low levels of each constituent were detected, none of the samples exceeded the Action Level. The highest amount detected for copper was .24 ppm and for lead was 2.5 ppb. The Action Level for these constituents is 1.3 ppm and 15 ppb, respectively.

Arsenic in Drinking Water

While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Nitrate in Drinking Water

Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain enzyme deficiencies. If you are caring for an infant, or if you are pregnant, ask advice from your health care provider.

MCL Violation—Coliform Bacteria

The City purchased water from UC Davis in July 2010; the UC Davis MCL violation occurred in January 2010.

Lead in Drinking Water

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. The City of Davis is 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, contact the City of Davis, the Safe Drinking Water Hotline (1-800-426-4791) or <http://www.epa.gov/safewater/lead>.

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 groundwater. 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. EPA and the California Department of Public Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State 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. EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Community Participation

The City Council and the Natural Resources Commission (NRC) receive public comments at their regularly scheduled meetings. Please check the City's web site at www.cityofdavis.org or call 530-757-5603 for Council dates or 530-757-5686 for NRC dates.

To Our Water Customers

This report is prepared in accordance with the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Public Health (CDPH) regulations under the Safe Drinking Water Act that requires water providers to report annual water quality information to their customers. This publication lists all constituents detected in your water supply over the last nine years and information about your water source, what it contains, how it compares to state and federal standards, and other related information.

For more information about this report, or for any questions relating to your drinking water, please call Davis Public Works at 530-757-5686 and ask for Marie Graham, Rick Thompson, or Dianna Jensen. 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 when using a cell phone call 530-758-3600 and you will be connected to a Public Works employee.

Water Conservation

Please visit our web site at www.cityofdavis.org or contact the Public Works office at 530-757-5686 to obtain more information about the City's efforts to conserve water.

Surface Water Project Begins

Plans are underway to largely replace groundwater supplies, currently the only source of water for City of Davis residents, with surface water from the Sacramento River. Water will be softer, be easier on water-using appliances, and will meet future anticipated state and federal regulatory requirements.

The Woodland-Davis Clean Water Agency (WDCWA) – a joint powers authority of the Cities of Woodland and Davis – was formed in 2009 to finance, build, and operate a regional surface water supply project. The project includes: Water intake structure on the Sacramento River; Pipelines from the intake structure to the water treatment facility; Regional water treatment facility located near Woodland; Pipelines from the water treatment facility to Woodland and Davis; and other repairs and updates to the Cities' existing local water systems.

Design of the regional facilities is expected to be completed by the end of 2012. Construction is slated for 2013-2015. The facilities should be fully operational in 2016. The WDCWA will aggressively seek state and federal funding to minimize the need for rate increases to support the project. For more information, visit www.wdcwa.com, or call 530-757-5673.

City of Davis Public Works
1717 Fifth Street
Davis, CA 95616

Important Information About
Your Water Quality
www.cityofdavis.org/pw/water

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

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Davis
California

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Water Treatment Process

Each well has a designated chlorine tank that injects a 12.5 percent solution of liquid sodium hypochlorite at the well site. The City targets 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.

Where Does Our Water Come From?

During 2010, the City pumped water from 20 municipal wells. These wells draw water from aquifers beneath the City at depths ranging from 210 to 1,800 feet below ground surface. The water is filtered naturally by sands and clays as it passes through geologic formations.



East Area Tank

The latest upgrade to our distribution system, the East Area Tank, went on-line in April 2011. The tank will hold 4 million gallons of water and provide additional storage capacity for the City. The tank will also help regulate pressure to the east and south sides of Davis.

The City and University Water Sales Agreement

During 2010, the City of Davis entered into an agreement with the University of California to purchase potable water from the University's distribution system. The existing connection on California Street was modified to allow the University to operate the connecting valve telemetrically. During high demand, the City has the option to purchase water from the University. The connection was installed so that during times of emergencies, the University could supply water to the City or the City could supply water to the University. This agreement still exists between the two entities.

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 of infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Center 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 1-800-426-4791.



Source Water Assessment

A source water assessment for the City of Davis was completed in 2002. 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.