

City of Davis (Public Water System #5710001) Water Quality Report For Year 2014

Important Information About Your Water Quality

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

此份有关你的食水报告,内有重要资料和讯息,请找他人帮你翻译及解释清楚。

What Does Our Water Contain?

The Safe Drinking Water Act requires all water purveyors to sample their source and treated water for biological, inorganic, organic, and radioactive constituents. The State Board allows systems to monitor for certain constituents less than once per year but all constituents that have been detected in the source water must be reported for a period of nine years or five years. Below is a table that lists those constituents that were detected in our source water over the compliance cycle.

DETECTION OF A CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD	Unit	Regulatory Limits		City of Davis Groundwater		Major Sources in Drinking Water	
		MCL (AL) [MRDL]	PHG or (MCLG) [MRDLG]	Range Detected	Weighted Average		
Aluminum*	ppb	1000	600	<50 - 1300	<50	Erosion from natural deposits; residue from some surface water treatment processes	
Arsenic	ppb	10	0.004	<2.0 - 7.3	4.1	Erosion from natural deposits; runoff from orchards; glass & electrical production wastes	
Barium	ppb	1000	(2000)	26 - 220	87	Erosion from natural deposits; discharges of oil drilling wastes and from metal refineries	
Hexavalent Chromium*	ppb	10	0.02	<2.0 - 39	13	Erosion from natural deposits; discharge from electroplating factories; leather tanneries, wood preservatives, chemical synthesis, refractory production and textile manufacturing facilities.	
Total Chromium	ppb	50	(100)	<10 - 40	12.7	Erosion from natural deposits; discharge from steel and pulp mills; chrome plating	
Fluoride	ppm	2	1	<0.1 - 0.84	0.34	Erosion from natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories	
Lead	ppb	(15)	0.2	<5.0 - 6.1	<5.0	Internal corrosion of household water plumbing, discharges from industrial manufacturing, erosion of natural deposits.	
Nickel	ppb	100	12	<10 - 33	<10	Erosion from natural deposits; discharge from metal factories	
Nitrate (as NO ₃)	ppm	45	45	<2.0 - 36	11.9	Runoff from fertilizer, leaching from septic tanks and sewage, erosion from natural deposits	
Selenium	ppb	50	30	<2.0 - 34	4.1	Erosion from natural deposits; discharge from petroleum, glass, and metal refineries; discharge from mines and chemical manufacturers; runoff from livestock lots	
ORGANIC COMPOUNDS							
Chloroform	ppb	80	NS	<0.50 - 1.2	<0.50	By-product of water chlorination	
RADIOACTIVE CONSTITUENTS (TESTED IN 2012)							
Gross Alpha	pCi/L	15	(0)	0.554 - 5.540	1.899	Erosion from natural deposits	
Combined Radium	pCi/L	5	(0)	ND - 2.02	0.41	Erosion from natural deposits	
Uranium	pCi/L	20	0.43	0.17 - 5.09	1.2	Erosion from natural deposits	
Sampled From the Distribution System	DISINFECTION BY-PRODUCTS				Range Detected	Maximum Concentration	
	Total Trihalomethanes	ppb	80	NS	<0.50 - 4.4	4.4	By-product of water chlorination
	Total Haloacetic Acids	ppb	60	NS	<0.50 - 1.5	1.5	By-product of water chlorination
	Residual Chlorine	ppm	[4]	[4]	0.03 - 0.94	N/A	By-product of water chlorination
	MICROBIAL RESULTS		% Positive	MCL	MCLG	Samples Collected	
Total Coliform Bacteria	<1.0% - 4.8%	5%	0%	956		Naturally occurring in the environment	

DETECTION OF A CONSTITUENT WITH A SECONDARY DRINKING WATER STANDARD	Unit	SMCL	PHG	Range Detected	Weighted Average	Major Sources in Drinking Water
Aluminum*	ppb	200	600	<50 - 1300	<50	Erosion from natural deposits; residue from some surface water treatment processes
Chloride	ppm	500	NS	17 - 240	37	Erosion from natural deposits; seawater influence
Copper	ppb	1000	NS	<5.0 - 68	20.8	Erosion from natural deposits; internal corrosion of household plumbing; leaching from wood preservatives
Iron*	ppb	300	NS	<30 - 1500	<30	Erosion from natural deposits; industrial wastes
Manganese*	ppb	50	NS	<10 - 52	15	Erosion from natural deposits
Specific Conductance*	µS/cm	1600	NS	490 - 2000	768	Substances that form ions when in water
Sulfate*	ppm	500	NS	28 - 430	53	Erosion from natural deposits
Total Dissolved Solids*	ppm	1000	NS	280 - 1300	458	Erosion from natural deposits
Turbidity	NTU	5	NS	<0.1 – 4.5	<0.1	Soil runoff
Zinc	ppb	5000	NS	<50 - 150	<50	Erosion from natural deposits; industrial wastes

*Please read below for information about our violations

DETECTION OF A CONSTITUENT WITHOUT A DRINKING WATER STANDARD	Unit	Range Detected	Weighted Average
Alkalinity	ppm	200 - 550	301
Bicarbonate	ppm	<3.0 - 550	297
Boron*	ppb	550 - 1100	822
Calcium	ppm	14 - 90	28
Carbonate	ppm	<3.0 - 13	5.4
Hardness	ppm	60 - 890	240
Potassium	ppm	<2.0 - 3	<2.0
Magnesium	ppm	6 - 160	42
Sodium	ppm	57 - 120	85
pH	(No unit)	8.1 - 8.4	8.3

*Please read below for information about our violations

About Our Violations

Chromium Six

Prior to July 1, 2014, Chromium Six (also known as Hexavalent Chromium) had been regulated under the Primary Drinking Water Standard (PDWS) for Total Chromium as the sum of the level of Chromium Six plus Chromium Three equals Total Chromium. California's regulation was adopted in 1997 and set the Maximum Contaminant Level (MCL) for Total Chromium at 50 parts per billion (ppb).

The State adopted a PDWS for Chromium Six that went into effect on July 1, 2014. The MCL was set at 10 ppb and all water systems were required to sample their source waters for this constituent by January 1, 2015. If the concentration is over the new MCL then the water supplier may opt to continue monitoring the source water quarterly during calendar year 2015. At the end of the year, if the running average of the four samples is over the MCL, then the system is out of compliance.

The City has opted to monitor its groundwater wells quarterly for this calendar year. At this time, twelve of our twenty wells have Chromium Six levels over the MCL. We will continue to monitor our source water during the year and post results on our website at www.CityofDavis.org. During 2015, we will operate those wells whose concentration of Chromium Six are below the MCL as lead wells and operate those wells with levels above the

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 USEPA.

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.

NL (Notification Level): Health based advisory set by the Department for constituents without an MCL. This is not an enforceable standard, although requirements and recommendations may apply if detected above this level.

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 CA 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.

MCL only as necessary. Finally, we anticipate delivering a new source of water, surface water from the Sacramento River, in 2016. This supply will have low levels, if any at all, of Chromium Six and will keep the City in compliance for delivering drinking water at the established State level.

If you have any additional questions, please contact the Public Works Department at 530-757-5686 or visit our website. For information about the health effects of Chromium Six, please contact the Yolo County Environmental Services at 530-666-8646 or contact the Safe Drinking Water Hotline at 1-800-426-4791.

Boron

Four wells have concentrations of Boron that exceed or were at the notification level of 1000 parts per billion (ppb). These concentrations are 1000 ppb (Well 11), 1100 ppb (Well 15), 1100 ppb (Well 22), and 1000 ppb (Well 33). Groundwater that contains Boron is derived from the leaching of rocks and soils that contain borate or borosilicate minerals. Boron is not a regulated contaminant but is considered a contaminant of concern. The high concentration of Boron in the Davis groundwater may have a detrimental impact on Boron sensitive plants. The babies of some pregnant women who drink water containing Boron in excess of the notification level, 1000 parts per billion (ppb), may have an increased risk of developmental effects, based on studies in laboratory animals.

Aluminum

Last year, Well 14 exceeded the Primary (1000 parts per billion) and the Secondary (200 parts per billion) Maximum Contaminant Level for Aluminum and Well 22's concentration was equal to the SMCL. Well 22 will now be regulated quarterly for this constituent. Well 14 was taken off line and will be operated as a stand-by well. Primary standards are set for health reasons and some health effects from drinking water with Aluminum concentrations over the Primary MCL over many years may include short-term gastrointestinal tract effects. The secondary standard for Aluminum is set for aesthetic reasons.

Iron

Last year, Well 14 and Well 22 exceeded the Secondary Maximum Contaminant Level for Iron. The SMCL for Iron is 300 ppb and the August concentrations were reported at 1500 ppb for Well 14 and 330 ppb for Well 22. The City has designated Well 14 as a stand-by well and Well 22 will be sampled quarterly as required under the Code of Regulations. Secondary standards are set for aesthetic reasons.

Manganese

Last year, Well 33's Manganese concentration of 52 ppb exceeded the Secondary MCL for Manganese, which is set at 50 ppb. This well will now be monitored every quarter for Manganese for the next year. If the Annual Running Average is below the MCL, then the well will be in compliance with the regulations. At this time, the ARA for the Manganese concentration at Well 33 is 48 ppb.

Well 21

The City is monitoring Well 21 every quarter due to high concentrations of sulfates, total dissolved solids, electrical conductivity, and hardness.

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 USEPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The State Board 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. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791)



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, 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.



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, 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 visit <http://water.epa.gov/drink/info/lead/index.cfm>.

Lead and Copper Rule

Tap water samples were collected from 31 Davis homes in 2014 and analyzed for lead and copper. None of the samples exceeded the Regulatory Action Level for Copper (1.3 parts per million) or Lead (15 parts per billion). Concentrations of Copper ranged from Not Detected to 0.33 parts per million. Lead was detected in one sample at a level of 8.6 parts per billion.

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 US EPA 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.

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 your State radon program (1-800-745-7236), the US EPA Safe Drinking Water Hotline (1-800-426-4791) or the National Safety Council Radon Hotline (1-800-767-7236).

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 US EPA/CDC (Centers for Disease Control) 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).

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 US EPA's Safe Drinking Water Hotline.

Where Does Our Water Come From?

During 2014, the City pumped water from 19 municipal wells. These wells draw water from aquifers beneath the City at depths ranging from 210 to 1,760 feet below ground surface. The water is filtered naturally by sands and clays as it passes through geologic formations.

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 dosage of 0.5 parts per million in the distribution system. 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. At Well 32, the source water is treated for manganese removal.

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 summary of the 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.

Unregulated Contaminant Monitoring Rule 3

As part of the Safe Drinking Water Act Amendments of 1996, the U.S. Environmental Protection Agency (EPA) is required to create a list every five years of up to 30 unregulated contaminants to be monitored in public water supplies. This list is derived from the Candidate Contaminant List (CCL) and represents compounds for which the EPA may consider as candidates for regulation. The City sampled selected wells and sampling stations in 2014 and 2015 for organic and inorganic compounds. The table below lists the unregulated constituents that were detected in the source water and in the distribution system. (*Note: Total Chromium is regulated under the Safe Drinking Water Act and Well 24 was sampled once in August 2014 and then again in January 2015.*)

The City sampled twelve municipal wells for unregulated contaminants as instructed by the USEPA during 2014 and 2015. The Rule also required samples to be taken from the distribution system. Four dedicated sampling stations were selected to best represent the

overall characteristics of the system. Please contact the Public Works Department Works at PWWeb@CityofDavis.org or (530) 757-5686 if you have any questions about these results.

2014 Unregulated Contaminants Detected in the Source Water and Distribution System

Location	Unit	Total Chromium Jan. /Aug.	Molybdenum Jan. /Aug.	Strontium Jan. /Aug.	Vanadium Jan. /Aug.	Hexavalent Chromium Jan. /Aug.	Chlorate Jan. /Aug.	Chloromethane Jan. /Apr. /Aug.
Well 14*	ppb	8.2/9.1	2.4/1.9	520/600	13/13	7.4/8.7	870/160	ND/ND/ND
Well 20	ppb	4.6/38	1.8/1.4	670/660	9.4/12	7/38	74/240	2.2/ND/ND
Well 21	ppb	6.4/6.1	2.4/1.7	790/1100	11/11	6.1/5.3	54/120	ND/ND/ND
Well 22	ppb	3.8/12	2.9/2.5	610/700	15/15	3.9/11	62/94	ND/ND/ND
Well 24	ppb	8.4	1.9	580	8.6	10	170	ND/ND/ND
Well 26	ppb	15/20	1.8/1.5	640/720	11/11	14/20	37/110	ND/ND/ND
Well 27	ppb	20/18	2.3/2.3	600/580	12/12	19/17	28/40	ND/ND/ND
Well 30	ppb	6.7/8.2	2.1/2.1	350/370	9/16	5.8/8.6	100/63	ND/ND/ND
Well 32	ppb	ND/ND	3.6/3.5	190/180	1.3/1.1	0.71/ND	49/180	ND/ND/ND
Well 33	ppb	ND/ND	4/3.8	210/180	4.6/3	0.2/ND	ND/ND	ND/ND/ND
Well 7	ppb	26/26	1.6/1.6	860/850	12/12	27/25	640/690	ND/ND/ND
Well EM3	ppb	13/14	1.5/1.6	740/680	9.9/9.6	14/13	ND/ND	ND/ND/ND
SS-012	ppb	24/40	1.6/1.4	500/690	10/12	25/41	59/130	ND/ND/ND
SS-017	ppb	12/30	2.5/2.4	450/750	11/13	12/28	51/130	ND/ND/ND
SS-018	ppb	ND/ND	3.4/3.6	180/180	1.2/1.2	0.54/0.11	270/220	ND/ND/ND
SS-023	ppb	ND/9	3.6/2.5	190/480	1.3/7.8	ND/8.7	54/150	ND/ND/ND

*Chlorate Notification

Chlorate is an unregulated contaminant that was a candidate for the Unregulated Contaminant Monitoring Rule 3. Chlorate was tested at designated well heads after chlorination and was detected at a range from Non-Detected to 870 parts per billion. The State has set a notification at 800 ppb. Chlorate is used in the manufacturing of dyes, explosives, matches, printing fabrics, paper pulp processing, weed killers and is also a by-product of certain types of water disinfectants. The most likely source of Chlorate in the Davis water would be from our source water interacting with Sodium Hypochlorite which is used for disinfection purposes.

To Our Water Customers

This report is prepared in accordance with the [United States Environmental Protection Agency \(USEPA\)](#) and the [State Water Resources Control Board](#) – Division of Drinking Water 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 contact Davis Public Works at PWWeb@CityofDavis.org or (530) 757-5686 and ask for Marie Graham, Gary Wells, or Stan Gryczko. 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.

Community Participation

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

SURFACE WATER PROJECT

The Surface Water Project will provide 10.2 million gallons per day (MGD) of water from the Sacramento River to Davis customers and 1.8 MGD to the UC Davis campus. The Davis water system now relies solely on groundwater. When the Project is complete in June of 2016, the City will rely on surface water as its primary source with groundwater used during peak demand times. The Project components include an intake structure, a raw water pipeline, a water treatment plant, and treated water pipelines to Davis and partner city, Woodland. The intake structure is jointly owned with RD2035, and will replace their existing intake, of which structural piles have now been set and the foundation slab is being constructed. At the water treatment plant the two clear wells are nearly complete, the slab for the filtration facility has been poured and the concrete walls are in place for the clarifiers and ozone facility. Pipeline construction is starting with coordination with local jurisdictions and farmers. More information is available about the Woodland Davis Clean Water Agency at www.WDCWA.com.

