

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。



Message to Our Valued Water Customers

The City of Davis is pleased to provide the 2021 Water Quality Report to you. Last year, as in years past, your tap water met all State and Federal drinking water standards. We are proud to report that our system did not have any violations of any maximum contaminant levels for water quality in 2021.

The City collected more than 1,400 water samples throughout the year and tested for over 125 contaminants, of which only those described in this report were detected. Additionally, numerous tests are conducted on the surface water at the Woodland-Davis Regional Water Treatment Facility prior to the finished water being delivered to Davis.

This report is a summary of last year's water quality. It shows the results of our monitoring for the period of January 1 to December 31, 2021 and may include earlier monitoring data. Included are helpful details about where your water comes from, what it contains, and how it compares to State water quality standards.

Sincerely,

Stan Gryczko
Public Works Director

Matt Deussenberry
Water Division Manager

Community Participation

The [Davis City Council](#) and relevant City Commissions receive public comments at their regularly scheduled meetings. For City Council meeting dates and times, please check the City's website at [CityofDavis.org](#) or call the City Clerk's Office at 530-757-5602. Commission meeting dates, times and topics can be found at the [City Commissions](#) webpage. Additionally, you can sign up to receive email notifications for meeting dates and topics at [www.cityofdavis.org/city-hall/enotification](#).

Our Continuing Commitment to You

Our staff of highly trained and certified operators are available around the clock to provide service for any emergency related to the City's water supply. Through teamwork, professionalism, and hard work, the City of Davis Public Works Utilities and Operations Water Division provides drinking water that meets or exceeds all State and Federal health standards.

To Our Water Customers

This report is prepared in accordance with the [United States Environmental Protection Agency \(U.S. EPA\)](#) and the [State Water Resources Control Board – Division of Drinking Water \(State Water Board\)](#) 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 and information about your water source, what it contains, how it compares to State and Federal standards, and other related information.

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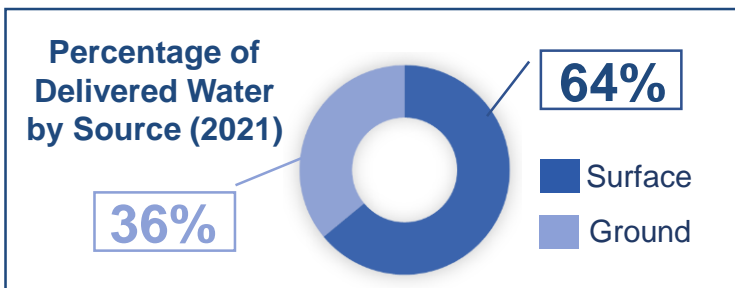
For more information about this report, or for any questions relating to your drinking water, please contact the City of Davis Public Works Utilities and Operations Department at Water@CityofDavis.org or 530-757-5686.

Where Does Our Water Come From?

The City of Davis water system is a conjunctive use system, which means it utilizes both surface water and groundwater for its drinking water supply.

The primary water source is surface water (water that collects on the surface of the ground), supplied from the Sacramento River and treated at the Woodland-Davis Regional Water Treatment Facility. The City's maximum surface water allotment (or how much the City is allowed to get) is 10.2 million gallons per day.

The City currently has 5 deep aquifer wells and 4 intermediate wells. The majority of groundwater delivered is from the deep aquifer wells, while the intermediate aquifer wells are typically only operated to ensure they are exercised properly, as required for water quality testing, or to meet peak demand.



Source Water Assessments

Surface Water

The Sacramento River Watershed Sanitary Survey 2020 Update Report, a source water assessment, was conducted by several agencies and can be obtained at [WDCWA Project History webpage](#). The report identified eight potential source water/watershed contaminant sources to the Sacramento River: agricultural drainage; livestock; forest activities; river corridor and river recreation; stormwater and urban runoff; industrial NPDES dischargers; wastewater facilities; and watershed spills. The report stated that, "overall, the Sacramento River continued to provide good quality raw water. The raw water can currently be treated to meet all drinking water standards using conventional water treatment processes. There are no long-term constituent trends prevalent in the raw water that necessitates special treatment processes at this time."

Groundwater

A source water assessment for the City of Davis' groundwater wells was completed in 2002 and an assessment was conducted for Well 34 in January 2017. The City's groundwater sources are most vulnerable to historic and present-day land use activities, including 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 activities and naturally occurring contaminants. For information on the summary of the assessment, contact City Water Quality Staff at 530-757-5686 or e-mail Water@CityofDavis.org

Water Treatment Process

Surface Water: Surface water is taken in from the Sacramento River and pumped to the Regional Water Treatment Facility in Woodland. This raw water is treated by traditional surface water techniques, including flash mixing and granular media filtration to remove microorganisms and other contaminants. The treated water is dosed with sodium hypochlorite (chlorine) for disinfection and with phosphoric acid to create ortho-phosphate for corrosion control. For more information on the treatment process, visit the [WDCWA FAQ](#) webpage.

Groundwater: Groundwater is treated at each well head with chlorine for disinfection. There is a manganese treatment facility at Well 32, which removes manganese from the source water at that well before entering the distribution system.

No fluoride is added to either the surface water or the groundwater. Fluoride is naturally occurring in low levels in the groundwater.

Distribution System Operations

After treatment at the Regional Water Treatment Facility in Woodland, the surface water is pumped into the transmission line and travels six miles to Davis. Surface water enters into the City's distribution system at three main turn-outs located in west, central, and south Davis.

The City's wells pump groundwater directly from underlying aquifers into either the transmission line or the distribution system, depending on the well. The four deep aquifer wells used primarily for drinking water delivery pump groundwater into the transmission line which is then blended with the surface water prior to entering the distribution system and arriving at the tap.

The ratio of surface water to groundwater varies throughout the year. In warmer months when there is higher water demand, groundwater is supplemented to meet demand. Wells are still operated periodically during the low demand months to ensure that they are exercised properly and as required for water quality testing.

Water Quality Testing

The City's water quality monitoring program consists of sampling certain constituents on a weekly, monthly, quarterly, or annual basis. Water samples are collected at sampling stations within the distribution system, at groundwater wells, and at the point of entry for surface water entering the City's water system. During the past year, the drinking water was tested for over 125 regulated and unregulated constituents. Samples are analyzed externally by certified contract laboratories and results of all regulatory required samples are submitted to the State Water Board to ensure compliance.

Water Hardness and Water Softeners

The City frequently receives questions on the current level of hardness of the drinking water and whether water softeners are recommended.

While water softness is often a matter of personal preference, when the City relied 100% on groundwater prior to 2016, water softeners had been installed in many Davis homes because of high hardness levels. Now that the City's primary water source is surface water and the majority of groundwater used is pumped from the deep aquifer, the level of hardness is significantly lower. For example, in 2015, the weighted average for hardness was 306 parts per million (ppm) or 18 grains per gallon (gpg); whereas in 2021, the weighted average for hardness was reduced to 71 ppm or 4.2 gpg.

Water hardness within Davis may fluctuate throughout the year, but rarely exceeds 110 ppm. During the winter months, when the City delivers mostly surface water, the level of hardness of the water may be lower than it is during the summer months when demand is enough that groundwater wells have to run regularly. The City does collect monthly hardness samples throughout the year in order to better understand the current level of hardness. Visit the [Water Quality Results](#) webpage to view results.

If you are still using a water softener at your home, please consider bypassing it to determine if the current level of water hardness is acceptable for your home, or adjust the grains setting on the water softener accordingly. Reducing or eliminating the use of water softeners can also save water and energy costs.

Minimizing the use of water softeners is also important to protect water quality, as some water softeners release large quantities of salts into the City's wastewater system. These salts are not removed, even after the water is processed through the City's wastewater treatment plant. The salts remain in the treated water that feeds the local wetlands, increasing the salt loading of the wetlands and rivers, and contributes to a variety of problems for the Sacramento Valley.



Water Conservation and Dry Weather

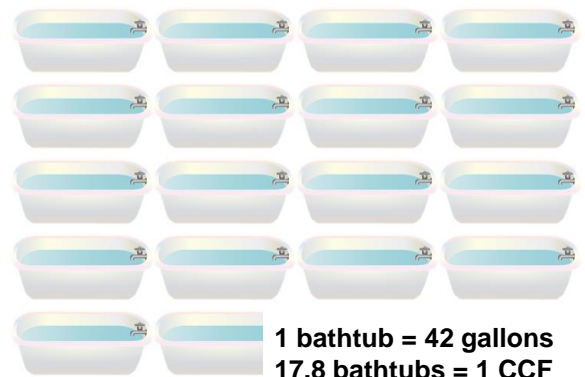
During the last drought, many residents in Davis instituted long-term changes to their water use by replacing turf areas with low-water use plantings, replacing older appliances and fixtures with water and energy efficient models, and making changes in everyday water use habits. With the City (and State) now in a third year of drought, it is particularly important for each of us to monitor our water usage and to repair any leaks as quickly as possible.

Whether we are in a dry or wet year, there are always actions we can take to increase long-term water use efficiency. For more information on water use efficiency in California, visit www.Water.CA.gov/Programs/Water-Use-And-Efficiency.

The AquaHawk online customer water use portal is available to City of Davis water customers. The AquaHawk portal allows customers to view their hourly water usage and set and then receive usage alerts. For more water savings tips and information on AquaHawk, water-wise landscaping, and links to helpful indoor and outdoor water use efficiency websites, visit www.SaveDavisWater.org.

Water Usage & Water Leaks

One of the questions frequently received regarding water usage on their City utility bill is "What is a CCF?" A CCF (hundred cubic feet) is 748 gallons. This is the equivalent of the amount of water it would take to fill 17.8 bathtubs (each bathtub = 42 gallons). Davis water customers may also see water usage displayed in AquaHawk and other sources as cubic feet (cf), and/or gallons. 1 cf = 7.48 gallons. In addition to AquaHawk, mentioned above, the city's online utility billing site allows customers to view past utility bills, water consumption reports, and make payments online.



Water customers are often surprised by the amount of water typical leaks can waste over time. A leaky faucet that drips at the rate of one drip per second can waste more than 3,000 gallons per year. An irrigation system that has a hole 0.031 inches in diameter (about the thickness of the tip of a ballpoint pen) can waste about 6,300 gallons of water per month. One of the most common leaks reported to the city are toilet leaks. The volume for toilet leaks can vary greatly depending upon the type of leak. Many toilet leaks are silent, especially if they are toilet flapper leaks. AquaHawk can be used to assist in finding leaks in the home and around the property. Visit [SaveDavisWater.org](http://www.SaveDavisWater.org) for more information on leak detection.

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 Water Board allows systems to monitor for certain constituents less than once per year because the concentration of these contaminants do not change frequently. Some of the data in this year's report, though representative, are more than one year old.

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 (1-800-426-4791).

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.

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 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.

In order to ensure that tap water is safe to drink, the U.S. EPA and the State Water Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Water Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.



Important Health Information

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. U.S. EPA/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).

Nitrate in Drinking Water

Nitrate in drinking water at levels above 10 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 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

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. 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.



Report a Water Quality Concern

Do you have a question or concern about your water quality? Are you experiencing any problems with your drinking water supply, such as discolored water or unusual taste or odor? Contact the Public Works Utilities and Operations Department during regular business hours (M-F 7:00 a.m. to 3:30 p.m.) at 530-757-5686 or contact the non-emergency Police Department number after hours at 530-747-5400.

The City is required to monitor drinking water for specific constituents on a regular basis and monitors several constituents more frequently than required by the regulations. While most monitoring was conducted in 2021, the State Water Board allows the monitoring of some constituents less than once per year because concentrations do not change frequently. Some of the data points, though representative, are more than one year old.

The results of the City's monitoring are reporting in the tables of detected constituents on the following pages. For help with interpreting this table, see "Definitions and Abbreviations" below.

1. Start with a **Constituent** and read across.
2. **Year** is the year tests were conducted. For most constituents this is 2021, but could be a previous year.
3. **Unit** is the specific unit of measurement for each constituent.
4. **Maximum Contaminant Level** shows the highest level of substance/constituent allowed by regulations. This is reflected by either MCL, SMCL, or MCLG.
5. **Public Health Goal** is the goal level for that substance (this may be lower than what is regulatorily allowed). This is reflected by either PHG, MCLG, or MRDLG.
6. **Range Detected** tells the highest and lowest amounts detected in the drinking water.
7. **Weighted Average** is the average amount of a constituent detected in the drinking water and is based on the detected result for each water source and the percentage of each source to the system.
8. **Major Sources in Drinking Water** tells where the substance usually originates and describes the most likely ways a constituent enters the drinking water.

Water Quality Definitions and Abbreviations

AL (Regulatory 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. Secondary MCLs 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 US 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.

N/A: Not Applicable

ND: Not Detected

NS: No Standard

NTU: Nephelometric Turbidity Units (a measure of clarity)

pCi/L: Picocuries per liter (a measure of radioactivity)

PDWS (Primary Drinking Water Standard): MCLs, MRDLs, and treatment techniques (TTs) for contaminants that affect health along with their monitoring and reporting 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.

PPM: Parts per million or milligrams per liter (mg/L)

PPB: Parts per billion or micrograms per liter (µg/L)

PPT: Parts per trillion or nanograms per liter (ng/L)

SMCL (Secondary Maximum Contaminant Level): SMCLs are set to protect the odor, taste, and appearance of drinking water.

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

T.O.N.: Threshold odor number (a measure of odor)

µS/cm: Microsiemens per centimeter (a unit expressing the amount of electrical conductivity of a solution).

90th Percentile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.



Did you know The City delivered 3.3 billion gallons of drinking water in 2021.



Summary of Detected Constituents

PRIMARY DRINKING WATER STANDARDS – Regulated to protect your health

Constituent	Unit	Year	MCL or (MRDL)	PHG, (MCLG), or [MRDLG]	Range	Weighted Average	Major Sources
Arsenic	ppb	2021	10	0.004	ND – 9.7	1.8	Erosion of natural deposits; runoff from orchards; glass & electronics production wastes
Barium	ppm	2021	1	2	ND – 0.19	0.07	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (Total)	ppb	2021	50	(100)	ND – 47	ND	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Carbon Tetrachloride	ppt	2021	500	100	ND – 520*	ND	Discharge from chemical plants and other industrial activities
Fluoride	ppm	2021	2	1	ND – 0.37	ND	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as N)	ppm	2021	10	10	ND – 6.3	ND	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium	ppb	2021	50	30	ND – 34	ND	Discharge from petroleum, glass, & metal refineries; erosion of natural deposits; discharge from mines & chemical manufacturers; runoff from livestock lots (feed additive)
Gross Alpha	pCi/L	2021	15	(0)	ND – 5.34	ND	Erosion of natural deposits
Gross Beta ^A	pCi/L	2018	50	(0)	ND – 10.45	ND	Decay of natural and man-made deposits
Combined Radium	pCi/L	2018	5	(0)	ND – 3.95	ND	Erosion from natural deposits
Uranium ^B	pCi/L	2021	20	0.43	ND – 5.5	ND	Erosion from natural deposits
Point of Entry for Surface Water							
Bromate	ppb	2021	10	0.1	ND – 2	1 ^C	Byproduct of drinking water disinfection
Total Organic Carbon	ppm	2021	TT	N/A	0.74 – 1.6	1.05 ^C	Various natural and manmade sources
Distribution System							
Total Trihalomethanes	ppb	2021	80	N/A	7.9 – 27	19.3 ^D	Byproduct of water chlorination
Total Haloacetic Acids	ppb	2021	60	N/A	ND – 11	5.6 ^D	Byproduct of water chlorination
Chlorine	ppm	2021	(4.0)	[4.0]	0.20 – 1.35	0.68 ^C	Drinking water disinfectant added for treatment

Summary of Detected Constituents (continued)

LEAD AND COPPER RULE – Tap water samples collected from sample sites throughout the community

Constituent	Unit	Year	AL	PHG	90 th Percentile	Sites Above AL/Total Sites	Major Sources
Lead ^E	ppb	2019	15	0.2	ND	0/37	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper	ppm	2019	1.3	0.3	0.089	0/37	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

SECONDARY DRINKING WATER STANDARDS – Regulated for aesthetic qualities

Constituent	Unit	Year	SMCL	Range	Weighted Average	Major Sources
Chloride	ppm	2021	500	10 – 86	15	Runoff/leaching from natural deposits; seawater influence
Iron	ppb	2021	300	ND – 180	ND	Leaching from natural deposits; industrial wastes
Manganese	ppb	2021	50	ND – 41	3	Leaching from natural deposits
Odor – Threshold	T.O.N.	2021	3	ND – 1.5	1.0	Naturally-occurring organic materials
Specific Conductance	µS/cm	2021	1600	180 – 1400	318	Substances that form ions when in water; seawater influence
Sulfate	ppm	2021	500	3.6 – 140	16	Runoff/leaching from natural deposits; industrial waste
Total Dissolved Solids (TDS)	ppm	2021	1000	100 – 830	178	Runoff/leaching from natural deposits
Turbidity	NTU	2021	5	0.1 – 0.6	0.1	Soil runoff

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. 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 do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants. 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 www.EPA.Gov/Lead.



Testing for Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Cryptosporidium was detected three times in the untreated surface water during 2020. However, the Regional Water Treatment Facility is designed to remove and/or deactivate these pathogens to ensure that this pathogen is not present in the finished water.

CONSTITUENTS WITH NO DRINKING WATER STANDARD^F

Constituent	Unit	Year	Range	Weighted Average
Alkalinity	ppm	2021	66 – 860	121
Boron	ppb	2021	ND – 970	286
Bicarbonate	ppm	2021	66 – 860	120
Calcium	ppm	2021	12 – 57	14
Carbonate	ppm	2021	ND – 31	0.2
Hardness as CaCO ₃	ppm	2021	56 – 630	71
Hexavalent Chromium ^G	ppb	2021	ND – 49	1.4
Potassium	ppm	2021	ND – 2.6	0.7
Magnesium	ppm	2021	6.6 – 120	8.8
Sodium	ppm	2021	15 – 120	42
pH		2021	8.0 – 8.4	8.1

UNREGULATED CONTAMINANT MONITORING RULE 4^H

Constituent	Unit	Year	Range	Average
Manganese	ppb	2018	ND – 200	ND
Bromochloroacetic Acid (BCAA)	ppb	2018	0.67 – 3.6	2.0
Bromodichloroacetic Acid (BDCAA)	ppb	2018	0.59 – 2.6	1.4
Chlorodibromoacetic Acid (CDBAA)	ppb	2018	0.37 – 1.3	0.8
Dibromoacetic Acid (DBAA)	ppb	2018	0.43 – 1.7	1.1
Dichloroacetic Acid (DCAA)	ppb	2018	0.96 – 5.6	2.5
Trichloroacetic Acid (TCAA)	ppb	2018	0.72 – 3.8	1.6

Footnotes

- * Constituents in bold text were exceedances, see the section below for more information.
- (A) The State Water Board considers 50 pCi/L to be the level of concern for beta particles.
- (B) The uranium result in pCi/L is based on a calculation.
- (C) This displays the regular average of sample results, not weighted average.
- (D) Average given is maximum of all local running annual averages calculated during 2021.
- (E) In addition to residential lead and copper sampling, fifteen schools in 2017 and one school in 2018 requested lead sampling to test their internal plumbing.
- (F) These constituents are of interest to some consumers; however, they have no regulatory thresholds.
- (G) There is currently no MCL for hexavalent chromium. The previous MCL of 10 ppb was withdrawn on September 11, 2017.
- (H) Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

About Our Exceedances

Carbon Tetrachloride. Carbon Tetrachloride is a volatile organic which was used as a commercial/industrial solvent in dry cleaning prior to 1960. One municipal well, Well 24, had a concentration of 520 ppt in a sample collected on August 12, 2021. Well 24 was taken offline and has since sampled ND for the rest of the year. Some people who use water containing carbon tetrachloride in excess of the MCL over many years may experience liver problems and may have an increased risk of getting cancer.



For more information about this report, please contact City of Davis Public Works Utilities and Operations at Water@CityofDavis.org or 530-757-5686.