Water Quality



ANNUAL REPORT 2018

WHAT'S IN THIS REPORT?

This Annual Water Quality Report, prepared in cooperation with the California State Water Resources Control Board (State Board) - Division of Drinking Water, provides important information about Fresno's water supply, water quality, and water delivery system. Test results for Fresno's 2018 Water Quality Monitoring Program are summarized on the following pages. It is important to read the messages regarding various water quality issues from the U.S. Environmental Protection Agency (USEPA) and from your City of Fresno Water Division. Unregulated contaminant monitoring helps USEPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated. Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. Daimntawy tshaj tawm no muaj lus tseemceeb txog koj cov dej haus. Tshab txhais nws, los yog tham nrog tej tug neeg uas totaub txog nws. Chi ti t này th t quan tr ng, xin nh ngu i d ch cho quý v. A copy of this report is available on the Fresno City website. It can be found at www.fresno.gov/ waterquality.

SECURING FRESNO'S WATER FUTURE

Construction of the Southwest Surface Water Treatment Facility (SESWTF) was completed in 2018. Known as the "backbone" of Recharge Fresno, the new facility was completed safely and under budget. In May 2018, the SESWTF began delivering drinking water to Fresno residents and local businesses. The facility enables diversification of the City's water supply, and is fed with surface water from the Kings

River Pipeline. With an ultimate goal of 80 million gallons per day (MGD), the SESWTF is currently rated at 54 MGD, and will ensure a sustainable water supply for Fresno's future.

SUSTAINABLE GROUNDWATER MANAGEMENT

In 2018, a major expansion of Fresno's water system was completed in an effort to reduce dependence on groundwater and replenishing the aquifer. The changes not only help Fresno comply with the Sustainable Groundwater Management Act, but they enable the City to achieve its long-term goal of becoming drought resilient. In addition to the SESWTF, the City developed pipelines that allow use of additional surface water (river water) from the Sierra Nevada Mountains. Previously, the City paid for additional surface water, but lacked pipelines and other facilities to treat that water for use within the City. Now, the City has the infrastructure needed to capture and treat this water – increasing the City's surface water treatment capacity by 200 percent.

GROUNDWATER IMPACT

As the City continues its efforts to reduce its dependence on groundwater, Fresno faces more stringent federal and state groundwater quality standards – ultimately making some wells unusable. These stricter standards for 1,2,3-trichloropropane (TCP) impacts 30 percent of Fresno's wells. If treatment is necessary, it could cost between \$170 million to \$300 million. To ensure the City's water system is well-maintained, aging pipelines continue to be assessed, and a strategy for replacing pipelines is in place.

WATER CONSERVATION

After several years of drought, California finally received an above-average year of rain. One year of above-average rainfall, however, is not going to cure all that ails our dry state. We need to work harder than ever to stay on the cutting edge of water conservation because we never know what the future holds. One thing we know for certain, though – if we each save a little, we will all save a lot.

REBATES

The City of Fresno offers a variety of rebates to qualified customers to offset some of the costs of installing water-efficient appliances, fixtures, and landscaping materials. Rebate forms are available online by visiting www.fresno. gov/water and clicking on rebates or request a hard copy by calling the City of Fresno's 311 Center by dialing 3-1-1 within City limits or by calling (559) 621-CITY (2489).

REBATES AVAILABLE

- Residential Toilet Rebate up to \$100
- Commercial & Multi-Family Toilet Rebate up to \$100
- Residential Clothes Washer Rebate up to \$100
- Lawn Replacement Rebate \$0.50 per square foot
- Micro (Drip) Irrigation Rebate \$0.50 per square foot
- High-Efficiency Sprinkler Nozzle Rebate Up to \$4 per nozzle
- Smart Irrigation Controller Rebate up to \$50
- Rain Sensor Rebate up to \$50
- Swimming Pool Cover Rebate up to \$100
- Hot Water Recirculating Pump Rebate up to \$100
- Rain Barrel Rebate up to \$50

SERVICES

The Water Conservation Program offers a variety of free services for our customers. These services are provided to help customers save money by reducing their water use and ensuring compliance with water conservation regulations. Customers can request any of the free services outlined below by submitting a service request through FresGO, or by calling the 311 Center by dialing 3-1-1 from within City limits or by calling (559) 621-CITY (2489).

SERVICES OFFERED

- Water-Wise Landscape Consultation
- Irrigation Efficiency Audit
- Irrigation Controller Assistance (Timer Tutorial)
- Interior/Exterior Water Leak Surveys

OUTDOOR WATER USE SCHEDULE

3-DAY OUTDOOR WATER USE SCHEDULE (APRIL 1 - OCTOBER 31)

- Addresses ending in odd numbers (1,3,5,7,9) Tuesdays, Thursdays and Saturdays.
- Addresses ending in even numbers (2,4,6,8,0) Wednesdays, Fridays and Sundays.
- Customers cannot water between 10am 6pm and never on Mondays.

1-DAY OUTDOOR WATER USE SCHEDULE (NOVEMBER 1 - MARCH 31)

- Addresses ending in odd numbers
- (1,3,5,7,9) Saturdays.
- Addresses ending in even numbers
- (2,4,6,8,0) -Sundays.
- Customers cannot water between 10am 6pm and never on Mondays.

Outdoor Water Use Schedules are subject to change at any time.

IMPORTANT WATER CONSERVATION RULES

- Customers may not use potable (fresh, drinking) water to wash sidewalks, walkways, driveways, parking lots, open ground, or other hard surface areas except where necessary for public health or safety.
- Customers may not use potable (fresh, drinking) water in a way that causes runoff onto adjacent properties, walkways, roadways, or parking lots.
- Car washing on private property is only allowed with the use of a bucket and a hose equipped with a shut off nozzle for a quick rinse.
- Customers may not irrigate outdoor landscapes with potable water during and within 48 hours of a measureable rainfall.
- Established swimming pools may only be drained once every 3 years, and then only with a permit obtained from the Water Conservation Program.

Nitrate: 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: 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.

Lead: 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 Fresno 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 http://www.epa.gov/lead.

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).

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 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).

The following tables list all the drinking water contaminants that were tested for during the 2018 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing between January 1 through December 31, 2018. The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data contained in this report, though representative of the water quality, is more than one year old.

FACTS ABOUT DRINKING WATER STANDARDS

Under the 1974 Safe Drinking Water Act, the United States Environmental Protection Agency and the California Department of Public Health were charged with the responsibility of setting and implementing safe drinking water standards. Congress reauthorized this act in 1996. There are 74 regulated contaminants and another 34 are subject to monitoring. Fortunately, only a small number have ever been detected in Fresno's water supply.

Notice of Violation No. 03-11-18N-013We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During the calendar year 2018, we failed to complete all required monitoring for 123-trichloroporpane (123-TCP) from the City's surface water sources (Enterprise Canal, Friant Kern Canal and the Jefferson Canal) for four consecutive quarters and therefore, we cannot be sure of the quality of your drinking water during that time. However, we did collect 26 samples from these source waters during the year and all show 123-TCP was not detected. It is not expected that 123-TCP will be detected in any surface waters used by the City.

CALIFORNIA DRINKING WATER SOURCE ASSESSMENT AND PROTECTION PROGRAM

The City of Fresno Water Division and the State Water Resources Control Board, formally the California Department of Public Health, CaDPH, has completed the California Drinking Water Source Assessment and Protection (DWSAP) Program for water wells operated by the Fresno Water Division. The complete report prepared in 2003 is available for viewing at the Water Division or the State Water Resources Control Board office. Please contact the Water Division at 621-5300 or State Water Resources Control Board at 447-3300 if you are interested in more information regarding this report.

The City operates approximately 260 wells throughout Fresno's 115 sq. mile service area. Given the size and complexity of our system, the DWSAP report is a very large document and even a brief summary would be difficult to include in this Consumer Confidence report. However, two summary data tables are available on the City's website at www.fresno.gov. In the search box type Water Quality Report and you will automatically be routed to the linking page containing the reports.

The multipurpose goal of the DWSAP is to identify ways communities can protect the water supplies, manage their water resources, improve drinking water quality, inform their citizens of known contaminants, and identify known activities and locations that can threaten their supply, and meet regulatory requirements. As an example, the following paragraph lists the contaminating activities and sources which can affect Fresno's drinking water.

Airports-Maintenance/fueling areas, Apartments and condominiums, Automobile-Body Shops, Automobile-Gas stations, Automobile-Repair Shops, Boat services/repair/refinishing, Chemical/petroleum processing/storage, Crops, irrigated, Dry Cleaners, Electrical/electronic manufacturing, Fertilizer, Pesticide/Herbicide Application, Golf courses, Historic gas stations, Historic waste dumps/landfills, Home manufacturing, Hospitals, Housing-high density, Junk/scrap/salvage yards, Known Contaminant Plumes, Landfills/dumps, Machine shops, Metal plating/finishing/fabricating, Medical/dental offices/clinics, Military installations, Motor pools, Office buildings/complexes, Parks, Pesticide/fertilizer/petroleum storage & transfer areas, Photo

processing/printing, Plastics/synthetics producers, Railroad yards/maintenance/fueling areas, Rental Yards, Schools, Septic systems-high density, Sewer collection systems, Transportation corridors-Railroads, Underground storage tanks-Confirmed leaking tanks, Utility Stationsmaintenance areas, Veterinary offices/clinics, Wastewater treatment plants, Wells-Agriculture/Irrigation, Wells-Water supply. More information is included in the summary which identifies the affected well(s) and associated activities.

SOURCES OF DRINKING 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 by-products 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 naturallyoccurring or be the result of oil and gas production and mining activities.

The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottles water that provide the same protection for public health. Additional information on bottled water is available on the California Department of Public Health website

(http://www.cdph.ca.gov/programs/Pages/fdbBVW.aspx)

Table 1: Primary Standards and Unregulated Contaminants

| Chemical Table | MCL | PHG (MCLG) | Fresno Average | Range of Detection's | MCL Violation | Last Sampled | Typical source of Contaminant | |
|-------------------------------------------|------------|---------------|-------------------|-------------------------|------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Volatile Organic Contaminants | · | | | | | | | |
| cis-1,2-Dichloroethylene (ug/L) (1) | 6 | 100 | 0.03 | 0 - 7.1 | NO | 2018 | Discharge from industrial chemical factories; major biodegradation byproduct of TCE and PCE groundwater contamination. | |
| Tetrachloroethylene (PCE) (ug/L) (2) | 5 | 0.06 | 0.37 | 0 - 6.5 | NO | 2018 | contamination Discharge from factories, drycleaners, and auto shops (metal degreaser) | |
| Trichloroethylene (TCE) (ug/L) | 5 | 1.7 | 0.28 | 0 - 3.8 | NO | 2018 | Discharge from metal degreasing sites and other factorie | |
| Synthetic Organic Contaminants | | | | | | | | |
| Dibromochloropropane (DBCP) (ng/L) | 200 | 1.7 | 110 | 0 - 180 | NO | 2018 | Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit | |
| 1,2,3-Trichloropropane (TCP) (ng/L) (3) | 5 | 0.7 | 3 | 0 - 90 | NO | 2018 | Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites; used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compounds and pesticides. | |
| Inorganic Contaminants | | | | | | | | |
| Aluminum (AL) (mg/L) | 1 | 0.6 | 0.086 | nd - 0.15 | NO | 2017 | Erosion of natural deposits; residue from some surface water treatment plants | |
| Arsenic (As) (ug/L) | 10 | 0.004 | 0.7 | nd - 5.6 | NO | 2017 | Erosion of natural deposits; runoff from orchards; glass and electronics production wastes | |
| Barium (Ba) (mg/L) | 1 | 2 | 0.030 | nd- 0.15 | NO | 2017 | Discharges of oil drilling wastes and from metal refineries erosion of natural deposits | |
| Chromium (Total) (ug/L) | 50 | (100) | 0.100 | nd - 12 | NO | 2017 | Discharge from steel and pulp mills and chrome plating; erosion of natural deposits | |
| Fluoride (ug/L) | 2 | 1 | 0.090 | nd - 1.9 | NO | 2017 | Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories | |
| Nitrate (N) (mg/L) (4) | 10 | 10 | 4 | 0 - 10 | NO | 2018 | Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits | |
| Perchlorate (ug/L) | 6 | 6 | 0.020 | nd - 3 | NO | 2017 | Historic aerospace or industrial operations associated with rocket propellant, fireworks, explosives, flares, matches and a varity of industries. | |
| Radionuclides | | | | | | | | |
| Gross Alpha (pCi/L) | 15 | n/a | 1.90 | nd - 7.55 | NO | 2017 | Erosion of natural deposits | |
| Radium 228 (pCi/L) | 5 | 0.019 | 1.30 | nd - 2.1 | NO | 2016 | Erosion of natural deposits | |
| Uranium (pCi/L) | 20 | 0.5 | 2.97 | 0.73 - 6.3 | NO | 2017 | Erosion of natural deposits | |
| Unregulated Contaminants (ICR, UCM | IR & Misc) | | | | | | | |
| Manganese (5) | | n/a | 1 | nd - 29 | n/a | 2018 | | |
| 1,4-Dioxane (ug/L) | | n/a | 4 | nd - 84 | n/a | 2017 | We are required by regulations to monitor for certain | |
| Dichlorodifluoromethane (Freon 12) | | n/a | 0.24 | nd - 19 | n/a | 2017 | unregulated contaminants. This is helpful to the USEPA and DDW for tracking the location of contaminants and | |
| Hexavalent Chromium (ug/L) (5) | | n/a | 2.8 | nd - 11 | n/a | 2017 | whether there is a need for stricter regulations. Several | |
| Tert-Butly Alcohol (TBA) | | n/a | 0.190 | nd - 1 | n/a | 2017 | contaminants indicate detected values with a "<" symbol | |
| Vanadium (total) | | n/a | 11 | nd - 71 | n/a | 2014 | meaning less than. There are two possible reasons for this. First, the Detection Limit for Reporting, the DLR, has | |
| Bromochloromethane | | n/a | 0.001 | nd - 0.79 | n/a | 2014 | not been established by EPA or DDW. Second, for various | |
| Chlorate | n/a n/a | | 204 | nd - 970 | n/a | 2014 | reasons, the analytical equipment is unable to quantify the value below the stated "less than" value but analysis | |
| Chlorodifluoromethane | | | 0.085 | nd - 3.8 | n/a | 2014 | indicates the contaminant is present. For either reason, | |
| Molybdenum (total) | | n/a | 0.9 | nd - 7.1 | n/a | 2014 | the concentration cannot be quantified and the City mus | |
| Strontium (total) | | n/a | 97 | nd - 510 | n/a | 2014 | assume that a "Fresno Average" is not applicable for this report. | |
| Disinfection Byproducts, Disinfectant | | | | | 11/4 | 2017 | Терога | |
| Total Trihalomethanes (TTHM) | 80 | n/a | 4.5 | nd - 14 | NO | 2018 | Byproduct of drinking water chlorination | |
| (ug/L) | | | | | | | <i>.</i> | |
| Haloacetic Acids (HAA5) (ug/L) | 60 | n/a | 1.50 | nd - 4.9 | NO | 2018 | Byproduct of drinking water chlorination | |
| Chlorine (NAOCL) (mg/L) | 4 | 4 | 1.27 | nd - 2.4 | NO | 2018 | Drinking water disinfectant added for treatment | |

Table 2: Micro Biological Contaminants

Micro Biological Contaminants

Over 220 bacteriological samples are collected every month in Fresno's distribution system. In addition, over 300 bacteriological samples are collected from wells and treatment sites.

| Contominant | minant Highest No. of No. of Months in Detection's Violation | | MOL | MOLO | Tomical Course of Bostonia |
|-------------------------|--------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------|------|--------------------------------------|
| Contaminant | | | MCL | MCLG | Typical Source of Bacteria |
| Total Coliform Bacteria | 2 of 238 or .84% | 0 | 5% | (0) | Naturally present in the environment |
| E.coli | 0 | 0 | A routine sample is positive for E.coli and a repeat sample is positive for total, fecal or E.coli bacteria | (0) | Human or animal fecal waste |

Table 3: Lead and Copper

Under the Lead and Copper Rule, samples are collected from inside residences meeting critera established by the USEPA.

| Contaminant | No. of Samples Collected Percentile Level Detected | | No. of Sites Exceeding Action Level | Sites Range of Action Page 2 | | MCLG | No. of Schools requesting lead testing | Typical Source of Contaminant |
|---------------------------------|----------------------------------------------------|------|-------------------------------------------------|------------------------------|-----|------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Lead (ug/L) (Sampled in 2018) | 101 | 0 | 0 | ND | 15 | 0.2 | 137 | Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits |
| Copper (mg/L) (Sampled in 2018) | 101 | 0.14 | 0 | ND - 0.31 | 1.3 | 0.3 | | Internal corrosion of household plumb- ing systems; erosion of natural depos- its; leaching from wood preservatives |

- (1) cis-1,2-Dichloroethylene(1,2-DCE): PS 251 located near Blackstone and Ashlan has been monitored monthly for VOC's. For 2017, the annual average concentration is 5.3ug/L and was below the MCL of 6ug/L. However, in 2018 samples collected in January and February increased the average and exceeded the MCL and the well was removed from service. Determination as to whether a well exceeds an MCL for non-acute contaminants such as 1,2-DCE is based on a running average for a prescribed period of time, typically six months. Therefore, a well may have several results above the MCL yet still meet drinking water standards. Some people who use water containing 1, 2-DCE in excess of the MCL over many years may experience liver problems.
- (2) Tetrachloroethylene (PCE):PS 284 located near Bullard and Maroa in NW Fresno was being monitored monthly for VOC's. For 2017, the average concentration remained below the MCL of 5 ug/L. However, in January of 2018 a sample exceeding the MCL caused the average to also exceed the MCL and the well was removed from service. A treatment system is currently being installed for this well. Determination as to whether a well exceeds an MCL for non-acute contaminants such as PCE is based on a running average for a prescribed period of time, typically six months. Therefore, a well may have several results above the MCL yet still meet drinking water standards until the average exceeds the MCL. Also, because of rounding, exceeding the MCL for PCE would not occur until the average reaches 5.5 ug/L. Some people who use water containing PCE in excess of the MCL over many years may experience liver problems, and may have an increased risk of getting cancer.
- (3) 1,2,3-Trichloropropane (TCP): In 2018, a new State regulation required testing of all water sources beginning in the first quarter. The new MCL for TCP is 5 ng/L or 5 parts per trillion and became effective in December 2017. Over 700 samples were collected from 199 individual sources. It was not possible to complete testing on all sources during the year due to maintenance issues at a number of sites but testing is ongoing or scheduled for the remaining sources when they become available. During 2018, 24 wells confirmed above the new MCL. Seven wells were able to remain in operation because existing treatment systems are approved and in place. The remaining 16 wells were removed from service. Of those, there are two that have treatment equipment in place, but reactivation and approval by the State is required before they can resume operation. Some people who drink water containing TCP in excess of the MCL over many years may have an increased risk of getting cancer.
- (4) Nitrate: Well 8A near Shields and Clovis has elevated nitrate levels and was tested regularly. A single result of 10 mg/L was detected in a sample collected in February. This result plus earlier results from 2017 pushed the average to the MCL of 10 mg/L and the well was removed from service. Infants below the age of six months who drink water containing nitrate in excess of the MCL may quickly become seriously ill and, if untreated, may die because high nitrate levels can interfere with the capacity of the infant's blood to carry oxygen. Symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women.
- (5) Manganese: a mineral currently regulated because of its aesthetic impact on water quality has a secondary maximum contaminant level of 50 ug/L. Manganese is currently being evaluated by the USEPA through its Unregulated Contaminant Monitoring Rule (UCMR IV.) The purpose of this testing program to help determine whether health based regulations are in order. This current series of UCMR testing for all City of Fresno water sources is scheduled to continue through 2019.

Table 4: Secondary Standards Contaminants List

Secondary standards are based on aesthetic factors (taste, appearance and odor, etc.) and are not health related.

| Inaugurio Conteminanto SMCI Fresno Range of SMCL Vio- Last Typical Source of | | | | | | | | | | |
|------------------------------------------------------------------------------|------|---------|-------------|--------|---------|-----------------------------------------------------------------------------------------|--|--|--|--|
| Inorganic Contaminants | SMCL | Average | Detection's | lation | Sampled | Contaminant | | | | |
| Aluminum (ug/L) | 200 | 0.9 | nd - 93 | NO | 2017 | Erosion of natural deposits; residual from some surface water treatment processes | | | | |
| Apparent Color (Unfiltered) | 15 | 0.37 | nd - 5 | NO | 2017 | Naturally-occurring organic materials | | | | |
| Iron (Fe) (ug/L) (6) | 300 | 9 | nd - 430 | NO | 2017 | Leaching from natural deposits; industrial wastes | | | | |
| Manganese (Mn) (ug/L) | 50 | 0.2 | nd - 13 | NO | 2017 | Leaching from natural deposits | | | | |
| Odor Threshold (units) | 3 | 0.182 | nd - 1 | NO | 2017 | Naturally-occurring organic materials | | | | |
| Specific Conductance (E.C.) (umho/cm+) | 1600 | 325 | 85 - 940 | NO | 2017 | Substances that form ions when in water; seawater influence | | | | |
| Sulfate (SO4) (mg/L) | 500 | 10.90 | nd - 92 | NO | 2017 | Runoff/leaching from natural deposits; industrial wastes | | | | |
| Total Dissolved Solids (TDS) (mg/L) | 1000 | 227 | 57 - 600 | NO | 2017 | Runoff/leaching from natural deposits | | | | |
| Turbidity (Lab) (units) | 5 | 0.190 | nd - 1.9 | NO | 2017 | Soil runoff | | | | |
| Zinc (Zn) (mg/L) | 5 | 0.001 | nd - 0.11 | NO | 2017 | Runoff/leaching from natural deposits; industrial wastes | | | | |
| Sodium (Na) (mg/L) | n/a | 26 | 4.5 - 57 | NO | 2017 | Sodium and Total Hardness are not regulated but many customers are interested due | | | | |
| Total Hardness (as CaCO3) (mg/L) | n/a | 123 | 11 - 400 | NO | 2017 | to concerns about sodium intake or water hardness | | | | |

⁽⁶⁾ Iron: One well, 40A,near Annadale and Freeway 99 in SW Fresnohad a result that exceeded the Secondary MCL for Iron. Most likely, the iron is related to developing corrosion on the column pipe and well casing, something that is normal for wellsthat have been offline for a long time. Well 40A was effectively out of service in 2017 but the sample was collected to keep the well current with required testing. The water was flushed to waste rather than into the distribution system. The well remained offline through the rest of 2017 and all of 2018 due to mechanical issues and a confirmation sample was not possible. Iron in water may cause discoloration and staining of appliances, fixtures and clothing.

Table 5: Turbidity in North East Fresno related to Surface Water Treatment Plant Operations

| | MCL | MCLG | Level Found | Range | Sample Date | Violation | Typical Source | |
|-----------------|---------------------------------|------|-------------|-------|-------------|-----------|----------------|--|
| Turbidity (NTU) | TT = 1 NTU | n/a | 0.217 | n/a | 12-Apr-18 | n/a | Call munoff | |
| | TT = 95% of samples <0.3 NTU | n/a | 100% | n/a | Continuous | n/a | Soil runoff | |

Turbidity is a measurement of the cloudiness of the water determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Table 5: Turbidity in South East Fresno related to T-3 Surface Water Treatment Plant Operations

| | MCL | MCLG | Level Found | Range | Sample Date | Violation | Typical Source |
|-----------------|---------------------------------|------|----------------|-------|----------------|-----------|----------------|
| Turbidity (NTU) | TT = 1 NTU | n/a | 0.272 | n/a | 9-Mar-18 | n/a | Soil runoff |
| | TT = 95% of samples <0.3 NTU | n/a | 100% | n/a | Continuous | n/a | |

Turbidity is a measurement of the cloudiness of the water determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Table 5: Turbidity in South East Fresno related to Surface Water Treatment Plant Operations

| | | MCL | MCLG | Level Found | Range | Sample Date | Violation | Typical Source |
|-----------------|---------------------------------|-----|-------|----------------|------------|----------------|-------------|----------------|
| Turbidity (NTU) | TT = 1 NTU | n/a | 0.197 | n /o | 18-Jul-18 | n/a | Soil runoff | |
| | TT = 95% of samples <0.3 NTU | n/a | 100% | n/a | Continuous | n/a | | |

Turbidity is a measurement of the cloudiness of the water determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light. We monitor it because it is a good indicator of the effectiveness of our filtration system.

ACRONYMS AND ABBREVIATIONS

n/a: not applicable

NTU: Nephelometric Turbidity Unit (a measure of light)

nd: not detectable at reporting limits.

ng/L: nanograms per liter or parts per trillion.ug/L: micrograms per liter or parts per billionmg/L: milligrams per liter or parts per millionpCi/L: picocuries per liter (a measure of radiation)

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.

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.

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

Maximum Residual Disinfectant Level (MRDL):

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.

Maximum Residual Disinfectant Level Goal (MRDLG): 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.

Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

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

WHERE DOES OUR DRINKING WATER COME FROM?

For Fresno customers, there are two sources of drinking water. One is derived from the Fresno Sole Source Aquifer, a large underground water system that supplies many communities in the San Joaquin Valley. The city operates approximately 260 wells that draw from this aquifer, which can lower the water table. For this reason, Fresno has an aggressive recharge program that is continually finding new places and methods to conduct ground water recharge. Water recharge operations can slow this decline, but with conservation, you can help have a greater impact.

The second source is surface water delivered via Fresno Irrigation District canals and comes from either Millerton or Pine Flat lakes located in the foothills east of Fresno. This water is treated to drinking water standards at three of Fresno's state of the art treatment facilities: the 30 million gallons per day Northeast Surface Water Treatment Facility, the 4 million gallons per day T-3 Water Storage and Treatment Facility in southeast Fresno or the newest and largest of the three, the 54 million gallons per day Southeast Surface Water Treatment Facility.

WHAT HAPPENS IN FRESNO IF A WELL EXCEEDS USEPA OR STATE BOARD STANDARDS?

If a well violates standards, it would be removed from service and an alternate water supply is provided. In the event a well exceeds standards but must stay in service, customers who receive water from that well would be directly notified by mail or by hand-delivered flyers.

EYEONWATER

Understanding your water use is an important part of conserving water. EyeOnWater is a free tool that allows City of Fresno customers to connect to their water utility accounts and view their latest water usage on their desktop or mobile device. EyeOnWater helps customers understand their water usage, detect leaks, and discover their watering trends. Customers can sign up by visiting fresno.eyeonwater.com/signup.



A copy of this report is available on the Fresno City website. It can be found at https://www.fresno.gov/ waterquality

A translation of this report in Spanish, Hmong or Vietnamese can be requested by calling (559) 621-5300.

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

Daimntawv tshaj tawm no muaj lus tseemceeb txog koj cov dej haus. Tshab txhais nws, log yog tham nrog tej tug neeg uas totaub txog nws.

Chi ti t này th t quan tr ng, xin nh ngu i d ch cho quý v.

A large print version of this report can be requested by calling (559) 621-5300.