Fallbrook Public Utility District





2024
WATER QUALITY REPORT

Fallbrook Public Utility District and its staff takes pride in providing reliable and safe water to our consumers. We test our drinking water quality for many constituents, as required by State and Federal Regulations. This report shows the results of our monitoring from calendar year 2023. This data was collected between January 1 and December 31, 2023.

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

The sources of our drinking water may 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.

Type of water sources in use: Recently, in December of 2021 and after 70 years of litigation, the district started providing treated water to its customers from the Santa Margarita Groundwater Treatment Plant (SMGTP). This facility can produce up to 7.8 million gallons a day. Flows are calculated based off water rights and predetermined based off the water table in the Santa Margarita River, located on Camp Pendleton. While FPUD is a water retailer, a portion of our water is purchased from the San Diego County Water Authority, which purchases much of its water from the Metropolitan Water District of Southern California. This water is treated at Metropolitan's Lake Skinner Filtration Plant in Riverside County.

Name & location of source(s): FPUD receives virtually all its water from three sources: a 242-mile-long aqueduct that brings Colorado River water from Lake Havasu to Southern California, a 444-mile-long aqueduct that carries water from the Feather River in northern California through the Delta to State Water Project contractors throughout the state and from Camp Pendleton through a 6.3-mile pipeline to our SMGTP. The water is supplied from 10 wells located near the Santa Margarita Riverbed. One percent of FPUD water comes from a local well (Capra Well).

Safety is our #1 priority! Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. The information in this report is to provide you with water quality information collected during 2023. Details about where the sample results were detected, what the results were, and how they compare to Federal and State standards are included.

Time and place of regularly scheduled board meetings: Every fourth Monday of the month at 4 p.m. in the district boardroom, located at 990 E. Mission Road. They are open to the public.

For more information contact: Noelle Denke, Public Affairs Specialist, (760) 728-1125.

We take extra measures to ensure we have high-quality water supplies

- The District's Red Mountain Reservoir is an open reservoir with a capacity of 440 million gallons and is used to store treated water purchased from the San Diego County Water Authority. The open reservoir met the health standards of the day when it was constructed in 1949 and was reconstructed and lined in 1985, and it has continued to meet or exceed water quality standards. Drainage collection and diversion ditches prevent local runoff water from entering the reservoir. The reservoir is physically inspected at least twice daily. Bacteriological tests are taken once a week. FPUD upgraded its disinfection facilities in early 2010 by installing Ultraviolet Technology (UV Technology) for additional disinfection.

- The water the District purchases from the Water Authority is a blend of fully treated Colorado River and State Water Project water that receives complete conventional treatment, along with ozone treatment – a cutting-edge, high-quality disinfection process. The water is treated at Metropolitan Water District's Skinner Filtration Plant.

- The groundwater the District provides from the SMGTP is treated by state of the art Reverse Osmosis (RO) and Granular Activated Carbon (GAC) processes to provide a high quality supply that meets or exceeds the quality from our imported supplies.

Terms Used In This Report:

Maximum Contaminant Level (MCL): The highest level of a contaminant 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 one's health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to one's health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. These are set by the U.S. Environmental Protection Agency.

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

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

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

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

NA: Not applicable, indicate when there is no established level

ND: Not detectable at testing limit

NL: Notification Level to SWRCB

SI: Saturation Index

µS/cm: Measure of electrical conductance

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

ppm or mg/L: Parts per million or milligrams per liter

ppb or µg/L: Parts per billion or micrograms per liter

ppt or ng/L: Parts per trillion or micrograms per liter

LRAA: Locational Running Annual Average; The LRAA is the highest Individual of all Running Annual Averages. It is calculated as an average of all the samples collected within a 12-month period.

Putting Units in Perspective

UNITS	UNITS	EQUIVALENCE
mg/L = milligrams per liter	ppm = parts per million	1 second in 11.5 days
µg/L = micrograms per liter	ppb = parts per billion	1 second in nearly 31.7 years
ng/L = nanograms per liter	ppt = parts per trillion	1 second in nearly 31,700 years
pg/L = picograms per liter	ppq = parts per quadrillion	1 second in nearly 31,700,000 years

***By comparison, a sample result of 15 ppb, is the same as 15 µg/L, is the same as stating 15 seconds in 31.7 years.**

Site of our Water Reclamation Plant on Alturas Road, before Camp Pendleton was there.

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, which can be naturally occurring or a result of urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides** 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 byproducts of industrial processes and petroleum production, can also come from gas stations, urban stormwater runoff, agricultural application and septic systems.
- **Radioactive contaminants,** which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board prescribe regulations that limit the amount of certain contaminants in tap water. These regulations also establish limits for contaminants in bottled water for the same public health protection.

For more information about contaminants and potential health effects, or for USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants, call the USEPA Safe Drinking Water Hotline (1-800-426-4791). 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/safewater/lead.

The tables that follow list the drinking water contaminants that were detected during the most recent sampling. If you do not see a contaminant listed here, it was not detected in 2023. The presence of these contaminants does not necessarily indicate that the water poses a health risk. The State Water Resource Control Board (SWRCB) allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though it is representative of the water quality, is more than one year old.

TABLE 1 - Sampling results showing the detection of coliform bacteria for the FPUD Distribution system

Contaminants (to be completed only if there was a detection of bacteria)	State or Federal MCL (Maximum Contaminant Level)	MCL	MCLG	Average	Range	Months in violation	Typical Source of Bacteria
Total Coliform	More than 5.0% (TT) of monthly samples are positive;	5.0% Positive	0	0	0 - 1.7%	0	Naturally present in the environment
E.coli (State Revised Total Coliform Rule)	A routine sample and a repeat sample detect total coliform, and either sample also detects fecal coliform or E.coli	0	0	0		0	E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal waste

The Revised Total Coliform Rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria). The U.S. EPA anticipates greater public health protection as the rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. Fallbrook met the RTCR and no assessments were required. DDW regulations require FPUD to test a minimum of 11 samples per week throughout our distribution system for total coliform bacteria, and to report the results, including the percentage of total coliform positive samples in a given month.

TABLE 2 – Lead and Copper Rule

Sampling results showing the detection of lead and copper for residential customers

Lead and Copper (Tested twice during 2022. Data is from May and November.) Test again duringJune-September 2023	Action Level	PHG	No. of sites exceeding Action Level	No. of samples collected	90th percentile level detected	Typical Source of Contaminant
Lead (µg/L)	15	0.2	0	46	2.2	Internal corrosion of household plumbing systems; erosion of natural deposits
Copper (mg/L)	1.3	0.3	0	46	.120	

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with immune system disorders, and some elderly and infants, can be particularly at risk for infection. These people should seek advice from their healthcare providers.

What about 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. FPUD is responsible for providing high-quality drinking water, but cannot control the variety of materials used in personal 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. Flushing your plumbing is a consideration when returning home from a long vacation. 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 https://www.epa.gov/lead

TABLE 3 - Detection of contaminants with a primary (health-related) drinking water standard

Sample results are a combination of samples taken from purchased Lake Skinner Water, treated water from the SMGTP and our Distribution System. All results are for potable treated water delivered to our customer's taps.

Water Clarity - Lake Skinner Filter Effluent Turbidity				
Turbidity (NTU)	TT = 95% of samples < 0.3 NTU	Lake Skinner Combined Filter Effluent Turbidity (NTU)	Max Level Found = 0.07 100% of samples < 0.3	Soil Runoff. Turbidity has no health effects. However, high levels of turbidity can interfere with disinfection and provide a medium for microbial gr

Water Clarity - Fallbrook Facility and Distribution System Turbidity								
CHEMICAL PARAMETERS	Units	MCL	DLR	Santa Margarita		Distribution System		MAJOR SOURCES IN DRINKING WATER
				Average	Range	Average	Range	
Turbidity	NTU	5	0.1	.03	0 - .29	.34	.10 - .89	Soil runoff

Turbidity is a measure of the cloudiness of the water and is regulated as a Treatment Technique (TT) – an indicator of the effectiveness of our treatment.

PRIMARY STANDARDS (MANDATORY HEALTH RELATED STANDARDS)

CHEMICAL PARAMETERS	Units	MCL	PHG (MCLG)	DLR	Treatment Plant				Distribution System		MAJOR SOURCES IN DRINKING WATER
					Lake Skinner		Santa Margarita				
					Average	Range	Average	Range	Average	Range	
Aluminum	ppb	1000	600	50	110	ND - 113	ND	ND - 60	27	ND - 54	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic	ppb	10	0.004	2	ND	ND	ND	ND - 2.1	ND	ND	Erosion of natural deposits, glass and electronics production waste
Barium	ppb	1000	2000	100	116		41	28-50	74	28 - 120	Erosion of natural deposits; discharges of oil drilling wastes
Total Chromium	ppm	50	(100)	1	ND	ND	.4	0 - 2.9	ND	ND	Erosion of natural deposits
Fluoride (treatment-related)	ppm	2	1	.1	.7	.6 - .8	.65	.59 - .73	.75	.6 - .99	Erosion of natural deposits; water additive that promotes strong teeth
Nickel	ppb	100	12	10	ND	ND	ND	ND - 24	ND	ND	Erosion of natural deposits; discharge from metal factories
Nitrate (as Nitrogen)	ppm	10	10	.4	ND	ND	.59	.27 - .93	.26	.25 - .26	Erosion of natural deposits; runoff and leaching from fertilizer use
Selenium	ppb	50	30	5	ND	ND	2.1	5.5 – 8.3	ND	ND	Naturally occurring in arid regions; industrial waste discharge

What is meant by primary drinking water standards? The National Primary Drinking Water Regulations (NPDWR) are legally enforceable primary standards and treatment techniques that apply to public water systems. Primary standards and treatment techniques protect public health by limiting the levels of contaminants in drinking water. Primary standards (MCLs) are developed for the purpose of protecting the public from possible health risks associated with long-term exposure to contaminants. These results are significantly below their respective MCLs. In general, no health hazard is expected to exist when contaminant levels are below a Primary MCL.

RADIOLOGICAL

CHEMICAL PARAMETERS	Units	MCL	PHG (MCLG)	DLR	Lake Skinner		Santa Margarita		Distribution System		MAJOR SOURCES IN DRINKING WATER
					Average	Range	Average	Range	Average	Range	
Gross Alpha	pCi/L	15	(0)	3	ND	ND - 4	1.34		NA		Erosion of natural deposits
Gross Alpha	pCi/L	50	(0)	4	ND	ND – 8	ND		NA		Decay of natural and manmade deposits
Uranium	pCi/L	20	.43	1	2	ND - 3	NA		NA		Erosion of natural deposits

How does radiological particles get into the drinking water? As water travels over the surface of the land or in underground aquifers, it dissolves naturally-occurring minerals and, in some cases, radioactive material. Radioactive materials can be naturally-occurring or a result of oil and gas mining activities. The results in the table above are presented in units of picocuries per liter (pCi/L), a standard measurement.

DISINFECTION RESIDUALS, DISINFECTION BY-PRODUCTS AND PRECURSORS (FEDERAL RULE)

CHEMICAL PARAMETERS	Units	MCL (MRDL)	PHG (MRDLG)	Lake Skinner		Distribution System		MAJOR SOURCES IN DRINKING WATER
				Average	Range	Average	Range	
Bromate (ppb)	ppb	10	0.1	ND	ND - 2.6	NA		Byproduct of drinking water ozonation
Total Chlorine Residual *Highest RAA*	ppm	(4)	(4)	31	21 - 37	1.82	0.06 - 3.33	Drinking water disinfectant added for treatment
Haloacetic Acids (five) *Highest LRAA*	ppb	60	NA	31	21 - 37	16.4	2.0 – 27	Byproduct of drinking water disinfection
Total Trihalomethanes *Highest LRAA*	ppb	80	NA	15	1.7 - 26	45.3	1.8 – 80	Byproduct of drinking water disinfection

Drinking water must be disinfected to ensure that any potentially harmful microbes are neutralized. However, all disinfectant strategies have the potential to create a byproduct. When ozone is used, bromate is monitored as a disinfection byproduct. Both Metropolitan and Fallbrook use chloramines as our final disinfection to carry a residual to our customers. This is a mixture of chlorine and ammonia. The disinfection byproducts from chloramines that the EPA and DDW regulate are Total Trihalomethanes (THMs) and Haloacetic Acids (HAA5). As drinking water travels through the distribution system to homes and businesses, a disinfectant residual must be maintained in order to prevent growth of potentially harmful microbes.

TABLE 4 – SECONDARY STANDARDS (AESTHETICS STANDARDS)

CHEMICAL PARAMETERS	Units	CA SMCL	DLR (MDL)	Treatment Plant				Distribution System		MAJOR SOURCES IN DRINKING WATER
				Lake Skinner		Santa Margarita				
				Average	Range	Average	Range	Average	Range	
Aluminum	ppb	200	50	113	ND - 110	ND	ND - 60	27	ND - 54	Erosion of natural deposits; residue from some surface water treatment processes
Chloride	ppm	500	(0.5)	91	72 - 110	80	62 - 92	89	67 - 110	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	1	1	1	ND	ND	ND	ND	Naturally - occurring organic materials
Odor - Threshold	TON	3	1	2	2	ND	ND	ND	ND	Naturally - occurring organic materials
Specific Conductance	µS/cm	1600	NA	852	664 - 1040	673	520 - 770	740	530 - 950	Substances that form ions when in water; seawater influence
Sulfate	ppm	500	0.5	174	113 - 236	105	82 - 120	152	84 - 220	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids	ppm	1000	10	536	401 - 670	385	280 - 440	475	320 - 630	Runoff/leaching from natural deposits

What are secondary drinking water standards? Secondary standards are set to protect the odor, taste, and appearance of drinking water. These parameters are not considered to present a risk to human health at or above Secondary MCL levels. If present at or above the Secondary MCL, these parameters may cause the water to appear cloudy or colored, or to have a different or unusual taste or odor.

TABLE 5 – OTHER PARAMETERS THAT MAY BE OF INTEREST

CHEMICAL PARAMETERS	Units	Notification Level	Treatment Plant				Distribution System		MAJOR SOURCES IN DRINKING WATER
			Lake Skinner		Santa Margarita				
			Average	Range	Average	Range	Average	Range	
Alkalinity	ppm	NA	108	92 - 125	132	110 - 150	120	110 - 130	Naturally present in the environment
Bicarbonate (HCO_3)	ppm	NA	NA	NA	132	110 - 150	120	110 - 130	Naturally present in the environment
Boron	ppb	1,000	130		ND	ND	ND	ND	Runoff leaching from natural deposits; industrial waste
Calcium Carbonate Precipitation Potential (CCPP) (as CaCO3)	ppm	NA	7.1	4.2 - 10	NA		NA		A measure of the balance between pH and calcium carbonate saturation in the water
Calcium	ppm	NA	56	39 - 72	41	31 - 50	50	32 - 68	Naturally present in the environment
Chlorate	ppb	800	17		NA		NA		Byproduct of drinking water chlorination; industrial processes
Corrosivity	SI	NA	.68	.62 - .75	NA		NA		Elemental balance in water; affected by temperature, other factors
Hardness *Conversion to grains below	ppm	NA	228	165 - 291	178	130 - 210	228	140 - 280	Consists of Magnesium and Calcium and is usually naturally occurring
Lithium	ppb	NA	30	18 - 43	NA		NA		Naturally-occurring; used in electrochemical cells

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TABLE 5 – OTHER PARAMETERS THAT MAY BE OF INTEREST

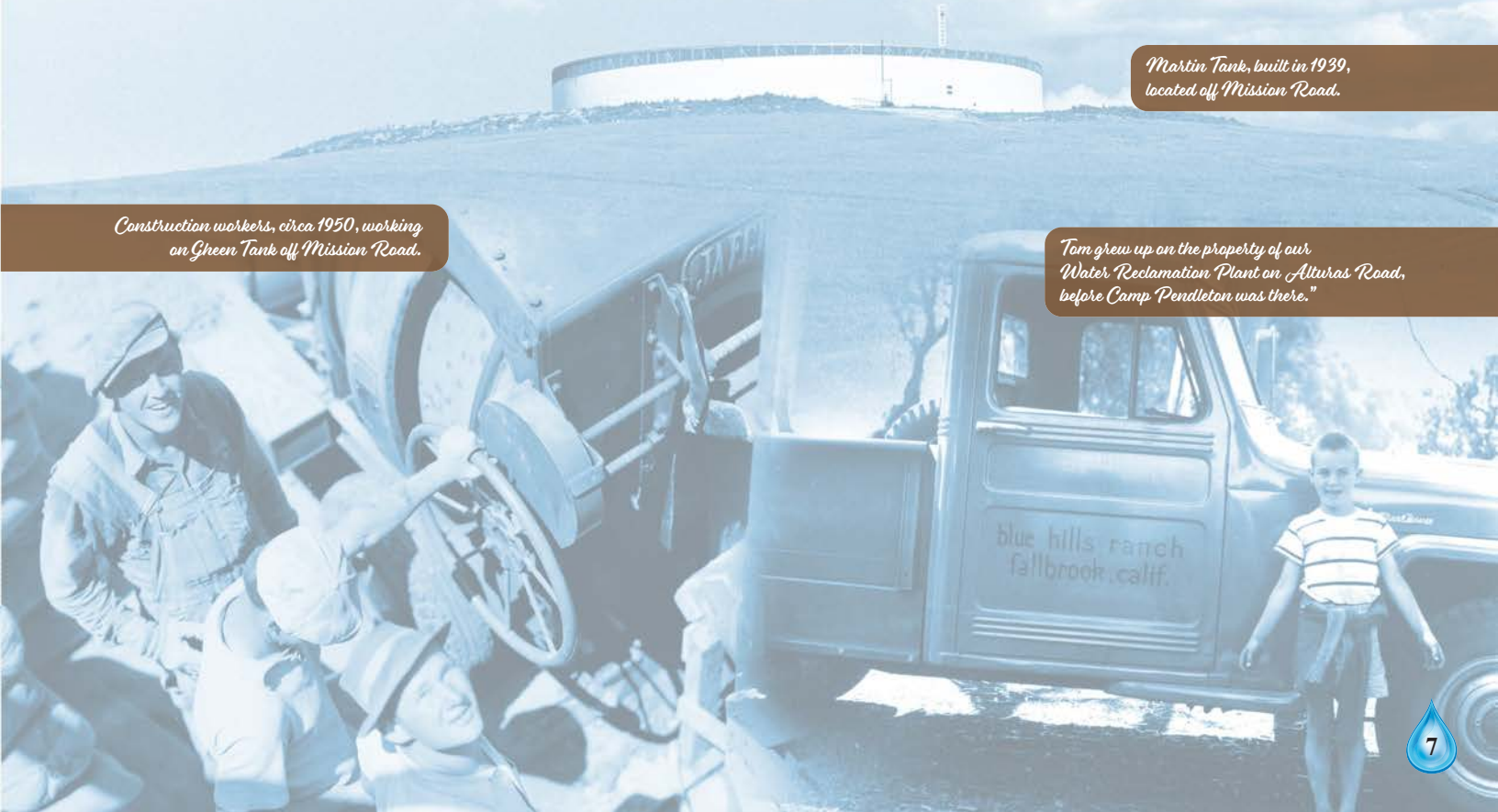
Magnesium	ppm	NA	20	15 - 27	18	13 - 21	20	14 - 25	Naturally present in the environment
N-Nitrosodimethylamine [NDMA]	ppt	10	3.2		NA		NA		Byproduct of drinking water chloramination; industrial process
Perfluorooctanoic Acid (PFOA)	ppt	5.1	NA		NA		NA		Industrial chemical factory discharges and various industrial processes
Perfluorooctanesulfonic Acid (PFOS)	Ppt	6.5	NA		NA		NA		Industrial chemical factory discharges and various industrial processes
Perfluorohexanesulfonic acid (PFHxS)	Ppt	3	NA		NA		NA		Industrial chemical factory discharges and various industrial processes
Perfluorobutanoic acid (PFBA)	ppt	5	2.0		ND	2.3	NA		Industrial chemical factory discharges and various industrial processes
pH	pH	NA	8.4	8.2 - 8.5	8.1	7.9 - 8.3	8.1	7.7 - 8.6	Various industrial processes
Potassium	ppm	NA	4.2	3.6 - 4.8	1.7	1.2 - 1.9	3	1.4 - 4.5	pH is a physical measure of water acidity
Sodium	ppm	NA	86	69 - 103	71	58 - 79	77	56 - 98	Salt present in the water; naturally-occurring
TOC *Total Organic Compounds*	ppm	TT	2.6	2.3 - 3	NA		NA		Various natural and manmade sources

TABLE 6 – Additional groundwater parameters

The source of these water samples is untreated influent groundwater that supplies SMGTP.

Constituent (CCR units)	MCL	PHG	Average	Range	Sample Date	Violation	Typical Source
Fluoride (naturally occurring in ground water source) (ppm)	2.0	1	0.28	0.22 - 0.31	2023	N/A	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories

The addition of fluoride: At SMGTP, our facility adds fluoride to the treatment process to match the existing water purchased from San Diego County Water Authority. Our water system treats the water by adding fluoride to the naturally occurring level to help prevent dental caries in consumers. State regulations require the fluoride levels in the treated water be maintained within a range of 0.6 to 1.0 mg/L with an optimum dose of 0.7 mg/L. Above is the chart showing the natural existing amount entering the facility. Our monitoring showed that the fluoride levels in the effluent treated water ranged from 0.10 to 1.20 mg/L with an average of 0.69 mg/L. Information about fluoridation, oral health, and current issues is available at http://www.swrcb.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml.

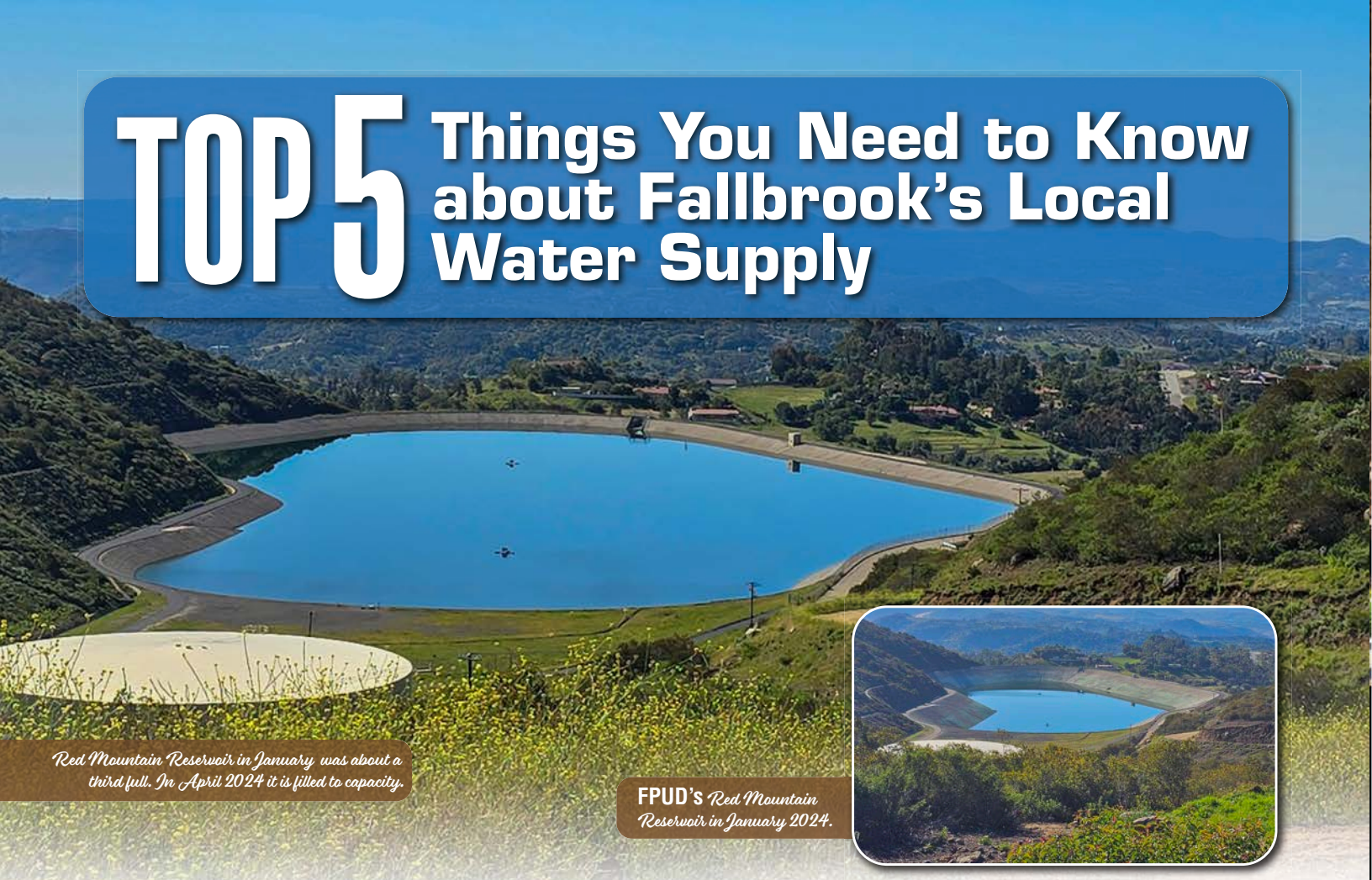


Martin Tank, built in 1939, located off Mission Road.

Construction workers, circa 1950, working on Gheen Tank off Mission Road.

Tom grew up on the property of our Water Reclamation Plant on Alturas Road, before Camp Pendleton was there."

TOP 5 Things You Need to Know about Fallbrook's Local Water Supply



Red Mountain Reservoir in January was about a third full. In April 2024 it is filled to capacity.

FPUD's *Red Mountain Reservoir in January 2024.*

1. **We're using mostly local water.** At the start of 2024, more than 80% of the water that came out of your tap is local water from the Santa Margarita River which flows right through Fallbrook.

2. **This is a huge shift from 3 years ago when 100% of our water was imported.** Imported water – imported ANYTHING – is more expensive.

3. **Our local Red Mountain Reservoir was full in early 2024** – at capacity. It holds 440 million gallons of water.

4. **California goes from drought to non-drought.** Thanks to your conservation and 2 wet years, we have plenty of water and no additional conservation efforts are required at this time. We have plenty of water – for NOW.

5. **Mostly local water:** In March 2024, we only had to purchase about 38 acre-feet of imported water. Compare that with March 2022 we had to purchase about 460 acre-feet of imported water. An acre-foot is enough water for three families of four for a year. It is about the size of a football field, covered in 1 foot of water.

We began using water from the Santa Margarita River at the end of 2021. It reduces imported water purchases! And it helps protect us from rising imported water costs. It's a long-term investment that helps to keep water rates stable.

The Santa Margarita River flows right through Fallbrook but for about seven decades, we were involved in one of the longest-running federal lawsuits over water rights to the river. Now with that lawsuit behind us, we share the river's water with Camp Pendleton. The water is purified at our water treatment plant on Alturas Road and then sent to Fallbrook taps.

Fallbrook Public Utility District

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