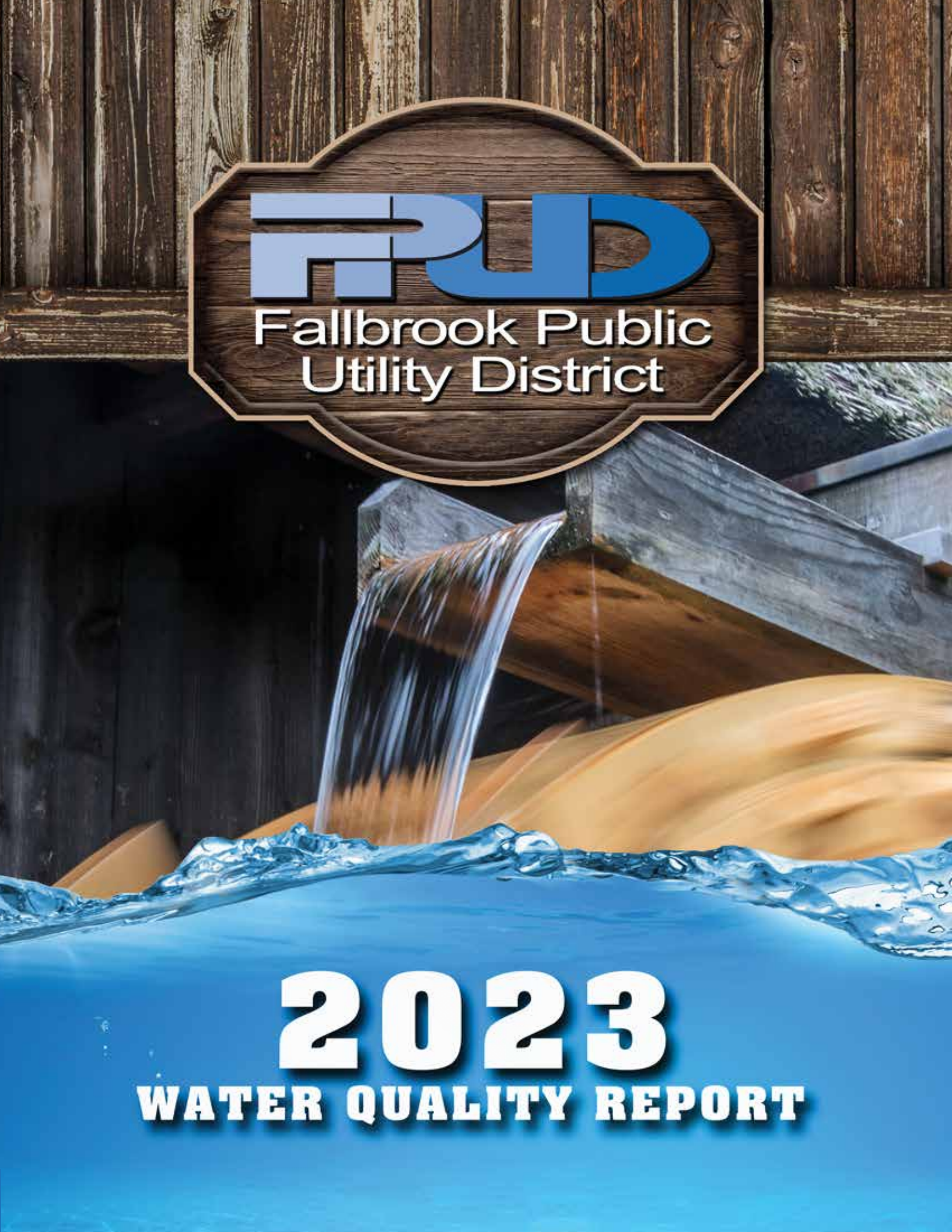

FPUD
Fallbrook Public
Utility District
2023
WATER QUALITY REPORT

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 2022.

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 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 determined by the 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 we receive from Camp Pendleton 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 contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

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 either purchased from the San Diego County Water Authority or treated by the SMGTP. The open reservoir met the health standards of the day when it was constructed in 1949, it 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 additionally disinfects the water prior to customer use with Ultraviolet Technology (UV Technology).

- 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 from the SMGTP is treated by state of the art Reverse Osmosis (RO) and Granular Activated Carbon (GAC) processes, which provides 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 2022. 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)	MCLG	Highest No. of detections	Highest monthly percentage	Months in violation	Typical Source of Bacteria
Total Coliform	More than 5.0% (TT) of monthly samples are positive;	0	1	2.1%	0	Naturally present in the environment
Fecal Coliform or *E. coli*	A routine sample and a repeat sample detect total coliform, and either sample also detects fecal coliform or E.coli	0	0	0	0	Human and animal fecal waste

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
May 2022						
Lead (µg/L)	15	0.2	0	72	ND	Internal corrosion of household plumbing systems; erosion of natural deposits
Copper (mg/L)	1.3	0.3	0	72	0.110	
November 2022						
Lead (µg/L)	15	0.2	0	73	2.4	Internal corrosion of household plumbing systems; erosion of natural deposits
Copper (mg/L)	1.3	0.3	0	73	0.110	

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 HIV/AIDS or other 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. 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/safewater/lead.

In addition, in January 2017, the State of California issued new guidelines on lead testing in schools. We are committed to supporting our school districts' efforts to protect students and ensure that the drinking water at their school sites meet lead limits. We completed our work with school districts serving kindergarten through 12th grade to develop sampling plans unique to each school site. We also sampled seven schools in our district and all the results were below the Action Level. There was no follow-up monitoring required, nor was there a need to take corrective action on any plumbing fixtures at any school sampled.

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, FPUD Distribution System and the water treated at SMGTP. All results are for potable treated water delivered to our customers' taps.

Chemical or Constituent (and reporting units)	MCL [MRDL]	PHG (MCLG) [MRDLG]	Sample Source	Level Detected (average)	Range of Detections	Typical Source of Contaminant
Clarity						
Turbidity (NTU)	TT	NA	Lake Skinner Combined Filter Effluent Turbidity (NTU)	Highest	0.05	Soil Runoff
				% < 0.3	100	
Inorganic Chemicals						
Aluminum (ppb)	1,000	600	Lake Skinner	113	ND - 230	Residue from water treatment process; natural deposits erosion
Barium (ppm)	1	2	Distribution, SMGTP	.046	ND - 10	Erosion of natural deposits
Fluoride – (ppm)	2	1	Distribution, SMGTP, Lake Skinner	.69	0.11 - 1.20	Erosion of natural deposits; Metropolitan Water District treats our water by adding fluoride to the naturally occurring fluoride level to help prevent dental caries in consumers. Fluoride levels in the treated water are maintained within a range of 0.7 to 1.3 mg/L, as required by the State Board regulations.
Nitrate (mg/L as Nitrogen)	10 (as N)	10 (as N)	SMGTP	ND	ND - 4.9	Runoff and leaching from fertilizer use; erosion of natural deposits
Selenium – (ppb)	50	30	SMGTP	ND	ND - 5.8	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
Radiological						
Gross Alpha (pCi/L)	15	(0)	Lake Skinner	ND	ND – 3.0	Erosion of natural deposits
Gross Beta (pCi/L)	50	(0)	Lake Skinner	7	5.0 – 8.0	Decay of natural and man-made deposits
Radium-228 (pCi/L)	5	0.019	Lake Skinner	ND	ND – 1.0	Erosion of natural deposits
Uranium (pCi/L)	20	0.43	Lake Skinner	ND	ND – 2.0	Erosion of natural deposits
Disinfection by-products, Disinfectant Residuals and Disinfection by-product precursors (Federal Rule)						
Bromate (ppb)	10	0.1	Lake Skinner	1.2	ND – 5.5	Byproduct of drinking water ozonation
Total Chlorine Residual (ppm) *Highest RAA*	[4]	[4]	Distribution	1.84	0.10 – 3.33	Drinking water disinfectant added for treatment
Haloacetic Acids (five) (ppb) *Highest LRAA*	60	NA	Distribution	5.9	2.0 – 9.8	Byproduct of drinking water disinfection
Total Trihalomethanes (ppb) *Highest LRAA*	80	NA	Distribution	24.0	13.0 – 28.0	Byproduct of drinking water disinfection

TABLE 4 – Detection of contaminants with a secondary (aesthetic) drinking water standard

Chemical or Constituent (and reporting units)	MCL	PHG (MCLG) [NL]	Sample Source	Level Detected (average)	Range of Detections	Typical Source of Contaminant
Chloride (ppm)	500	NA	Distribution, SMGTP, Lake Skinner	76	34 - 106	Runoff/leaching from natural deposits; seawater influence
Color (units)	15	NA	Lake Skinner	2	1 - 2	Naturally occurring organic materials
Odor Threshold (TON) *Threshold Odor Number*	3	NA	Lake Skinner	NA	ND - 1	Naturally occurring organic materials
Specific Conductance (µS/cm)	1,600	NA	Distribution, SMGTP, Lake Skinner	665	310 - 1030	Substances that form ions when in water; seawater influence
Sulfate (ppm)	500	NA	Distribution, SMGTP, Lake Skinner	119	7.1 - 229	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	1,000	NA	Distribution, SMGTP, Lake Skinner	415	190 - 651	Runoff/leaching from natural deposits
Turbidity (NTU) *Nephelometric Turbidity Unit*	5	NA	Distribution	.26	ND – 1.09	Soil runoff

TABLE 5 – Additional parameters

Chemical or Constituent (and reporting units)	Notification Level	Sample Source	Level Detected (average)	Range of detections	Major sources in drinking water
Alkalinity (ppm)	NA	Distribution, SMGTP, Lake Skinner	112	73 - 130	Naturally present in the environment
Bicarbonate (HCO_3) (ppm)	NA	Distribution, SMGTP	110	73 - 130	Naturally present in the environment
Boron (ppb)	1,000	Lake Skinner	NA	ND - 130	Runoff leaching from natural deposits; industrial waste
Calcium Carbonate Precipitation Potential (CCPP) (as CaCO3)	NA	Lake Skinner	10	6.1 - 13	A measure of the balance between pH and calcium carbonate saturation in the water
Calcium (ppm)	NA	Distribution, SMGTP, Lake Skinner	44	18 - 71	Naturally present in the environment
Chlorate (ppb)	800	Lake Skinner	NA	ND - 75	Byproduct of drinking water chlorination; industrial processes
Corrosivity (SI)	NA	Lake Skinner	.66	.58 - .75	Elemental balance in water; affected by temperature, other factors
Hardness (ppm) *Conversion to grains below	NA	Distribution, SMGTP, Lake Skinner	181	77 - 282	Consists of Magnesium and Calcium and is usually naturally occurring
Magnesium (ppm)	NA	Distribution, SMGTP, Lake Skinner	17	7.7- 26	Naturally present in the environment
N-Nitrosodimethylamine (ppb)	10	Lake Skinner	2.1	ND - 4.4	Byproduct of drinking water chloramination; industrial process
Perfluorobutane sulfonic acid [PFBS] (ppt)	500	SMGTP	NA	ND – 4.1	Perfluorobutane sulfonic acid exposures resulted in decreased thyroid hormone in pregnant female mice.
Perfluorooctanoic Acid [PFOA] (ppt)	5.1	SMGTP	NA	ND – 3.6	Perfluorooctanoic acid exposures resulted in increased liver weight and cancer in laboratory animals.
Perfluorooctanesulfonic Acid [PFHxS] (ppt) **Notification Level Exceedance	3	SMGTP	NA	ND – 12	Perfluorooctanoic acid exposures resulted in increased liver weight and cancer in laboratory animals.
Perfluorooctanesulfonic Acid [PFOS] (ppt) ***Notification Level Exceedance	6.5	SMGTP	NA	ND – **10**	Perfluorooctanesulfonic acid exposures resulted in immune suppression and cancer in laboratory animals.
pH (pH units)	NA	Distribution, SMGTP	8.1	7.8 – 8.2	Naturally present in the environment
Potassium (ppm)	NA	Distribution, SMGTP, Lake Skinner	3.0	ND– 4.8	Naturally present in the environment
Sodium (ppm)	NA	Distribution, SMGTP, Lake Skinner	72	44 - 103	Generally naturally occurring
TOC (ppm) *Total Organic Compounds*	TT	Lake Skinner	2.5	2.3 - 2.6	Various natural and manmade sources

*To convert Hardness (mg/L) to Hardness (grains), divide by 17.1. For example, 230mg/L divided by 17.1 = 13.4 grains.

**This result was not a violation of the Notification Level for PFHxS, as the MCL was not adopted at the time of the sample. The current notification was issued on 10/31/2022, after the clearwell effluent results from 2/1/2022. Since completion of the Granular Activated Carbon filtration system at the SMGTP, the results have been below detectable levels.

***The district was notified on January 10, 2022, of an exceedance in the notification level on a sample for Perfluorooctanesulfonic Acid (PFOS). The two samples were collected on January 4, 2022 and February 1, 2022. After communicating with the State Water Resource Control Board, the decision was made February 28, 2022 to change the treatment process through the reverse osmosis system, changing the blend through the facility, as out-lined in the Operation Plan. We continued operating in this condition until mid-March this year, when the addition of a Granular Activated Carbon filter went online at the facility, which enhances the removal of Perfluoroalkyl and Polyfluoroalkyl substances.

The district's Granular Activated Carbon (GAC) addresses regulations relative to PFAS compounds. Completion of GAC facilities was delayed during treatment plan construction. As result, the treatment plant was initially brought online without GAC facilities. This resulted in some measured levels of one PFAS compound above the Notification Level. A notification level (NL) is a health-based advisory level for which there is no formal regulatory standard. Specifically, the notification level for PFOS was set at 6.5 ng/l. A Response Level (RL) is the level at which an action is required, such as taking a well out of service or establishing additional treatment. The Response Level for PFOS was set at 40 ng/l, but two sample exceeded the NL amount (7.7 ppt on January 4, 2022 and 10 ppt on February 1,2022).

Even though the levels detected are below the RL, operation has been adjusted to ensure the discharge is below the NL, and the GAC facilities are now on-line. Now that the GAC facilities are online, the levels will be well below the NL. The district was cited for not following its permitted operation plan for the SMGTP (Citation 05_14_22C_006).

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	0.09 – 0.57	2022	N/A	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories

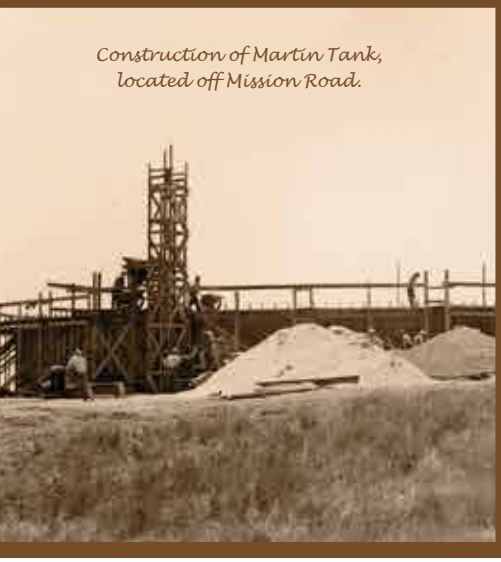
The addition of fluoride: At SMGTP, our facility adds fluoride to the treatment process to match the existing water purchased from San Diego County Water Authority. Our water system treats the water by adding fluoride to the naturally occurring level to help prevent dental caries in consumers. State 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.

Fallbrook Public Utility District

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.



Construction of Martin Tank, located off Mission Road.

Fallbrook Public Utility District

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