City of Santa Cruz Water Department

Consumer Confidence Report 2021

CITY OF SANTA CRUZ
Water Department

What is This Report?

The annual Consumer Confidence Report on water quality reflects the hard work and investment by the City of Santa Cruz Water Department (SCWD) to provide high-quality drinking water to its customers. SCWD water meets all U.S. Environmental Protection Agency (USEPA) and State Water Resources Control Board, Division of Drinking Water (State Board) drinking water health standards.

Included in this report are details about where SCWD water comes from, what it contains, and how it is treated and tested to ensure customers receive high quality drinking water. SCWD is committed to providing customers with accurate information about their drinking water quality.

Espanol • Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse el Departamento de Agua de la Ciudad de Santa Cruz a (831) 420-5220 o 212 Locust Street, Suite D; Santa Cruz, CA 95060 para asistirlo en español.

Where Does Our Water Come From?

Our drinking water supply consists of surface water and groundwater that are well protected and carefully managed by the SCWD. SCWD depends on raw water from four locales: the San Lorenzo River (SLR), Loch Lomond Reservoir, North Coast sources and the Live Oak groundwater wells (also known as the Beltz Wells). All of our water sources are locally derived and dependent on annual rainfall and runoff. In 2021, 92% of water served to SCWD's customers was produced at the Graham Hill Water Treatment Plant (GHWTP), while the remaining 8% was produced by the Beltz and Beltz 12 Treatment Plants.

Where Does Our Water Come From?

San Lorenzo River and Tait Wells

SLR water is diverted at two locations: Tait Street Diversion and Felton Diversion.

The Tait Street Diversion, located in the City of Santa Cruz west of the GHWTP, diverts water from the river and the Tait Wells. Water produced by the Tait Wells is delivered to the SLR intake sump at the Coast Pump Station and then pumped to the common transmission pipeline that also conveys the SLR and North Coast water to the GHWTP.

The Felton Diversion, located five miles upstream from the Tait Street Diversion, pumps water from the SLR to Loch Lomond Reservoir for storage when flows are available. Under the current water rights diversion permit for the Felton Diversion, water diverted at Felton cannot be sent directly to the GHWTP. Ultimately, this water is directed back to the GHWTP for use/ treatment by way of the Newell Creek pipeline.

Loch Lomond Reservoir

Loch Lomond Reservoir was constructed in 1960 and is located on Newell Creek, approximately ten miles northeast of the City of Santa Cruz. The reservoir's maximum storage capacity is approximately 8,776 acre-feet (2.8 billion gallons). Water is conveyed from Loch Lomond to the GHWTP through the Newell Creek Pipeline. Loch Lomond primarily receives local watershed runoff but can also receive water diverted from the SLR at the Felton Diversion, as allowed under the current water rights.

North Coast

The North Coast water supply consists of two coastal streams and one spring located six to eight miles northwest of the City of Santa Cruz. Water from Liddell Spring, Laguna Creek, and Majors Creek is transported through the Coast Pipeline to the Coast Pump Station, where it is conveyed to the GHWTP. The use of some of these sources by SCWD dates back to 1890.

Of the North Coast sources, only Liddell Spring was used to contribute to the GHWTP raw blend influent during 2021.

The Majors Creek pipeline has been out of service since it was damaged in January 2021. A repair is underway and, should sufficient streamflow exist, the pipeline will be back in service in 2022. Laguna Creek has been out of production as SCWD is committed to maintain stream bypass flows that support anadromous salmonids in addition to a retrofit project to the Laguna Creek Division.

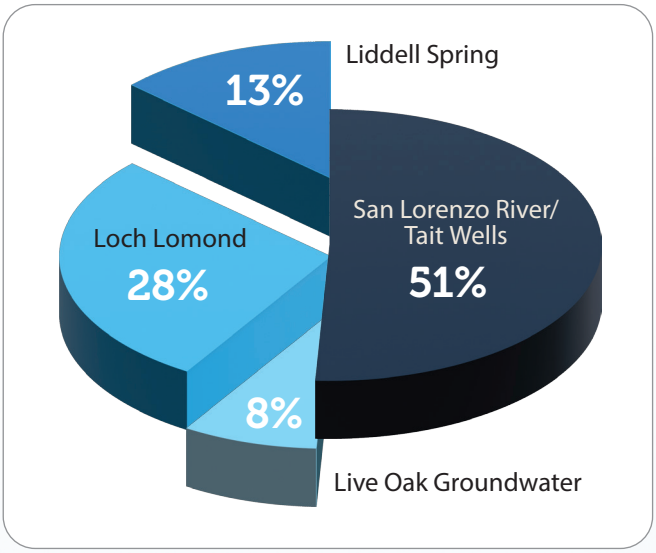
Live Oak Beltz Groundwater Wells

The Live Oak well system consists of four groundwater wells and two small groundwater treatment plants (Beltz Treatment Plant and Beltz 12 Treatment Plant) located in the southeast portion of the City's service area. Three of these wells draw directly from the Purisima Aquifer, while one well draws from both the Purisima and Santa Margarita Aquifers.

Generally, the groundwater treatment plants are used during the late spring, summer and early fall seasons to supply customers in the southeast service area when surface water flows have diminished. Due to the drought conditions of 2021, the groundwater treatment plants were utilized earlier, and for a greater portion of the year, than in previous years. The Beltz Treatment Plant was in use in January, February, June through October and in December. The Beltz 12 Treatment Plant was in use between April and June.

2021 System Supply

During 2021, the SLR and Tait Wells contributed 51% of the total source water supply, while Loch Lomond contributed 28%, Liddell Spring contributed 13%, and the Live Oak groundwater wells contributed 8%.



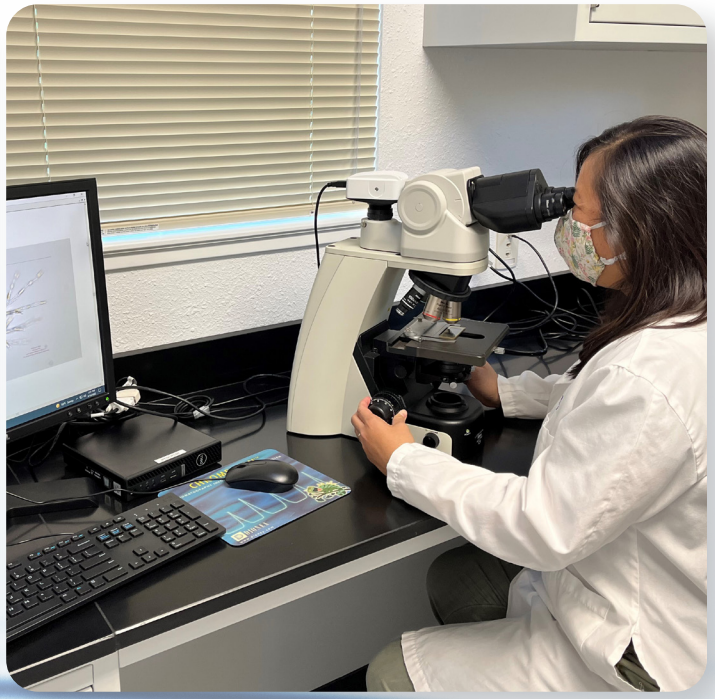
Contaminants That Can be Present

To ensure that tap water is safe to drink, the USEPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also **establish limits for contaminants in bottled water** that provide the same protection for public health.

The sources of drinking water (both tap 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 activities.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses, parasites 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 storm water 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 storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can come from gas stations, urban storm water 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.



Source Water Assessment and Protection

Since 1996, water suppliers that rely on surface water have been required to conduct source water assessments of water sources, called Watershed Sanitary Surveys, to identify potential sources of contamination and determine how to manage potential contaminants. Assessments include a delineation of the area around water sources and a review of activities with the potential to release contaminants within that area. Watershed Sanitary Surveys are required every five years. Several potentially contaminating activities exist in the area of SCWD water sources, including improperly functioning septic systems, commercial cannabis cultivation, urban runoff, roads (including timber harvest roads), quarry activities, geologic hazards and fires including landslides after significant rains, chemical spills, pesticides and herbicides, among others. To provide high quality drinking water, SCWD works proactively with partners to reduce or eliminate potential contaminant sources and prioritizes the use of the best quality source waters during times when the drinking water system is most vulnerable (i.e. during storm runoff periods). This watershed protection effort also provides environmental benefits, such as support for steelhead trout and Coho salmon. In 2018, the Watershed section of SCWD completed an **update to the 2013 Drinking Watershed Sanitary Survey of the San Lorenzo Valley and North Coast Watersheds.**

In response to the CZU Lightning Complex Fire in August 2020, SCWD revised production procedures and increased water quality sampling to ensure protection of its drinking water. SCWD facilities did not sustain direct damage from the CZU fire. However, approximately 20% of the SLR watershed, as well as the upper reaches of the North Coast watersheds (Laguna Creek, Majors Creek, and Liddell Creek), were within the CZU fire perimeter. Loch Lomond Reservoir and surrounding watershed were not within the affected fire zones. **Learn more about SCWD's post-CZU source water quality sampling.**

Review the source water report for Water Year 2021 (Oct. 1, 2020 – Sept. 30, 2021), which includes source water quality data post-CZU Lightning Complex Fire.

Precautions for Vulnerable Populations

Although SCWD treats water to meet drinking water standards, 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, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers.

Drinking Water and Lead

Lead was not detected above the regulatory action level in SCWD's water supply. Exposure to lead, if present, can cause serious health effects, especially for pregnant women and young children. Lead in drinking water is primarily derived from materials and components associated with service lines and home plumbing. SCWD is responsible for providing high-quality drinking water but cannot control the variety of materials used in indoor plumbing components. When your water has been sitting for several hours in these pipes, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two 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 want to consider 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 (1-800-426-4791) or on the **USEPA website**.

Lead in Schools

In 2017, the State Board directed all permitted water systems in California to provide lead monitoring assistance to all public K-12 schools. Between 2017-2019, SCWD assisted 24 schools within the Santa Cruz service area with lead testing per the free **Lead Testing Schools program**. You may contact your school or the SCWD's Water Quality Laboratory (WQL) for the results.

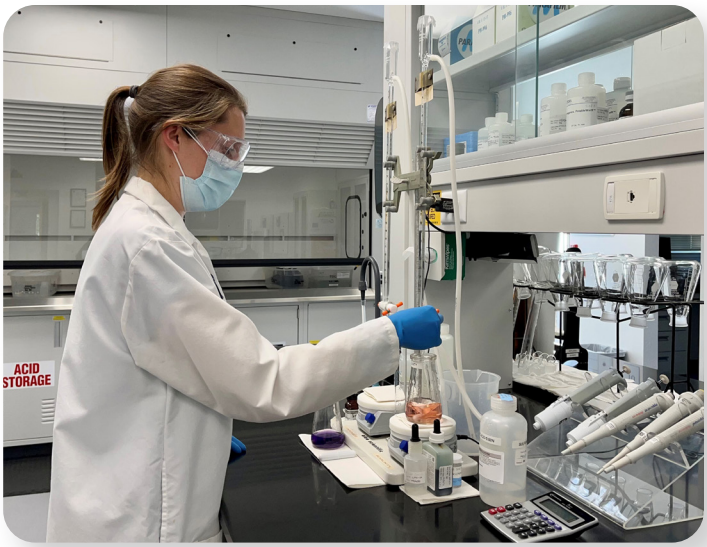
Lead and Copper

In 2021, tap water samples were collected from 32 Santa Cruz area homes and analyzed for lead and copper as required by the **Lead and Copper Rule (LCR)**. The results are provided in the Water Tests Results Table and do not represent lead and copper concentrations throughout the distribution system. The next round of LCR monitoring will be conducted in the summer of 2024.

Testing and Monitoring Water Quality

To ensure water quality standards are met, drinking water samples are collected weekly throughout the service area and analyzed for a variety of chemical and microbiological analyses. Samples are tested by SCWD's WQL, a California Environmental Laboratory Accreditation Program certified drinking water laboratory, using the latest testing procedures and equipment. The WQL collects and analyzes over 100 distribution system and 15 raw source water quality samples per month to ensure that water delivered to its customers meets or exceeds Federal and State drinking water standards. In 2021, the WQL processed more than 47,300 drinking water tests from the raw source waters, treatment plants and City's distribution system. This is in addition to the extensive treatment process control monitoring performed by the certified Water Treatment Operators and online instruments. Test results from the distribution system are provided in the Water Quality Table of Detected Contaminants on pages 9-10 of this report. Some of the data in this report, though representative, are more than one year old. SCWD holds a State Board monitoring waiver for some contaminants that were not detected after repeated monitoring and therefore their monitoring frequencies are less than annual.

Laboratory analysis was also performed for many constituents beyond what is listed in the tables; only those constituents detected in the tap water are shown. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk.



Unregulated Emerging Contaminants

In addition to performing routine monitoring of source water, treatment plant finished water, and the distribution system to comply with State and Federal regulations, SCWD also voluntarily performs monitoring for unregulated emerging contaminants with State notification levels (NLs) such as chlorate and per- and polyfluoroalkyl substances (PFAS).

Chlorate is a disinfection byproduct resulting from the on-site generation of chlorine and was detected below the NL in the treated finished water at the Beltz Treatment Plant and the GHWTP.

In 2021, SCWD performed monthly monitoring of the GHWTP treated finished water for 25 per- and polyfluoroalkyl substances (PFAS) compounds. PFAS is a group of approximately 5,000 man-made, persistent chemicals used in a variety of industries and consumer products. Although PFAS chemicals are currently unregulated in drinking water, the USEPA has established a lifetime health advisory level (HAL) of 70 parts per trillion (ppt) for the combined concentration of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). Additionally, the State Board established NLs for three PFAS chemicals including PFOA (5.1 ppt), PFOS (6.5 ppt), and Perfluorobutanesulfonic acid (500 ppt). PFOS was detected in the GHWTP treated finished water below the 6.5 ppt NL.

For additional information about PFAS, visit the **State Board website** or the **USEPA website**.

More information on drinking water NLs can be found on the **State Board website**.

How Constituents are Measured

Constituents are measured and reported in extremely small quantities such as parts per million, parts per billion, and in some cases, parts per trillion. These comparisons help explain the measurements:

Milligrams per liter (mg/L) or parts per Million (ppm)

One drop in 14 gallons

One second in 11.5 days

Micrograms per liter (ug/L) or parts per Billion (ppb)

One drop in 14,000 gallons

One second in nearly 32 years

Nanograms per liter (ng/L) or parts per Trillion (ppt)

One drop in 14,000,000 gallons

One second in nearly 32,000 years

Abbreviations and Data Table Units

CU: Color unit (a measure of color)

mg/L: milligrams per liter or parts per million (ppm)

ng/L: nanograms per liter or parts per trillion (ppt)

NTU: Nephelometric Turbidity Units

pCi/L: picocuries per liter (a measurement of radioactivity)

µg/L: micrograms per liter or parts per billion (ppb)

µmhos/cm: a measure of electrical conductivity

Key Water Quality Terms

Some of the terms, abbreviations and symbols are unique to the water industry and might not be familiar to all customers. Terms used in the table are explained below:

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

HAL: Health Advisory Level: Non-enforceable and provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water.

LRAA: Locational Running Annual Average: The locational quarterly average of the most recent 12 months of data.

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 U.S. Environmental Protection Agency.

MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG: Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants..

NA: Not Applicable

ND: Contaminant Not Detected

NL: Notification Level: Health-based advisory levels established by the SWRCB-DDW for chemicals in drinking water that lack MCLs. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.

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

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

SDWS: Secondary Drinking Water Standards: MCLs for contaminants that may adversely affect the taste, odor or appearance of drinking water. These aesthetic considerations are not considered as health concerns.

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

Water Test Results

This table lists all of the drinking water contaminants and other constituents detected between January 1 and December 31. Secondary standards relate to aesthetic aspects of water. Santa Cruz Water Department water quality met or surpassed all State and Federal criteria for public health protection.

AVERAGE (RANGE: LOW-HIGH)								
Detected Contaminants (units)	**Sample Date**	**MCL, (AL) or [MRDL]**	**PHG or [MCLG]**	**Graham Hill Water Treatment Plant**	**Beltz Treatment Plant**	**Beltz 12 Treatment Plant**	**Violation**	**Major Source In Drinking Water**
REGULATED CONTAMINANTS WITH PRIMARY DRINKING WATER STANDARDS								
Aluminum (mg/L)	2021	1	0.6	0.03 (0.02 – 0.06)	ND	ND	No	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (µg/L)	2021	10	0.004	ND	0.2 (ND – 1.2)	ND	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Fluoride (mg/L)	2021	2.0	1	0.16 (ND – 0.24)	0.10 (0.08 – 0.11)	0.49 (0.46 – 0.52)	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2021	15	0	ND	NA	NA	No	Erosion of natural deposits
Nitrate as N-Nitrogen (mg/L)	2021	10	10	0.75 (ND – 1.9)	ND	ND	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage, erosion of natural deposits
REGULATED CONTAMINANTS WITH SECONDARY STANDARDS								
Iron (mg/L)	2021	0.3	NA	ND	0.03 (ND – 0.2)	ND	No	Leaching from natural deposits; industrial wastes
Chloride (mg/L)	2021	500	NA	24 (15 – 30)	53 (49 – 56)	43 (41 – 46)	No	Runoff/leaching from natural deposits; seawater influence
Color (CU)	2021	15	NA	1 (1 – 1)	1 (1 – 1)	1 (1 – 1)	No	Naturally-occurring organic materials
Manganese (µg/L)	2021	50	NA	<2 (ND – 2.3)	4 (ND – 22)	<2 (ND – 2.9)	No	Leaching from natural deposits
Specific Conductance (µmhos/cm)	2021	1600	NA	450 (415 – 485)	713 (695 – 740)	735 (670 – 855)	No	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	2021	500	NA	73 (60 – 88)	128 (120 – 130)	100 (100 – 100)	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	2021	1000	NA	274 (270 – 280)	500 (490 – 510)	471 (450 – 500)	No	Runoff/leaching from natural deposits
OTHER WATER QUALITY PARAMETERS (FORMERLY OTHER MONITORING RESULTS)								
Hardness (mg/L)	2021	NA	NA	169 (152 – 200)	249 (236 – 260)	246 (200 – 272)	NA	Hardness is the sum of naturally occurring cations present in the water, generally calcium and magnesium
Sodium (mg/L)	2021	NA	NA	25 (22 – 28)	48 (47 – 49)	36 (31 – 45)	NA	Sodium refers to the salt present in the water from runoff/leaching from natural deposits and saltwater influence
Hexavalent Chromium (µg/L)	2021	NA	NA	0.10 (0.054 – 0.18)	0.043	NA	NA	Naturally occurring in rocks, plants, soil, volcanic dust, and animals

UNREGULATED STATE CONTAMINANTS WITH NOTIFICATION LEVELS

Detected Contaminants (units)	Sample Date	NL	Average (Range: Low-High)		Major Source in Drinking Water
			Graham Hill Water Treatment Plant	Beltz Treatment Plant	
Chlorate (µg/L)	2021	800	180	460	Degradation of hypochlorite solutions
Perfluorooctanesulfonic Acid (PFOS) (ng/L)	2021	6.5	<2 (ND – 2.3)	NA	Food and industrial manufacturing facilities

UNREGULATED CONTAMINANTS (UCMR 4)

Detected Contaminants (units)	Sample Date	Source Water Average	Source Water Average		
			Low	High	
Total Organic Carbon (mg/L)	2018/2019	2.6	1.7	4.1	
Bromide (µg/L)	2018/2019	53	42	64	
Detected Contaminants (units)	**Sample Date**	**Treated Water Average**	**Treated Water Average**		
			Low	**High**	
Manganese (µg/L)	2018/2019	2.4	<0.4	11	**Constituents**
Brominated Haloacetic Acids 6 HAA6Br[4] (µg/L)	2018/2019	17	11	26	Bromochloroacetic acid, bromodichloroacetic acid, dibromoacetic acid, dibromochloroacetic acid, monobromoacetic acid, and tribromoacetic acid
Haloacetic Acids 9 HAA9[5] (µg/L)	2018/2019	49	31	70	Bromochloroacetic acid, bromodichloroacetic acid, chlorodibromoacetic acid, dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, tribromoacetic acid, and trichloroacetic acid

Detected Contaminants (units)	Sample Date	PHG or [MCLG]	MCL or [MRDL]	Results	Violation	Major Source in Drinking Water
TURBIDITY (Turbidity samples were collected and also analyzed continuously/every 15 minutes at the Graham Hill Water Treatment Plant)						
Turbidity (NTU)	2021	NA	TT=1 NTU	0.57 Highest Single Turbidity Result of 2021	No	Soil runoff. Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
	2021	NA	TT=95% of samples ≤0.15 NTU	100%		
MICROBIOLOGICAL (Microbiological samples were collected from predetermined sample locations throughout the distribution system)						
Total Coliform Bacteria	2021	0 positive	<5% positive samples per month	0 positive	No	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria are present
E. coli	2021	0 positive	0 positive samples per year	0 positive	No	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal fecal wastes
DISINFECTION BY-PRODUCTS AND DISINFECTANT RESIDUAL (DBPs and disinfectant residual samples were collected from predetermined sample locations throughout the distribution sys-tem)						
Detected Contaminants (units)	**Sample Date**	**PHG or [MCLG]**	**MCL or [MRDL]**	**Average (Range: Low-High)**	**Violation**	**Major Source in Drinking Water**
Chlorine (mg/L)	2021	4	[4]	0.84 (0.03 – 2.6)	No	Drinking water disinfectant added for treatment
Total Trihalomethanes (TTHM) (µg/L)	2021	NA	80 LRAA	61 (10 – 68)	No	By-product of drinking water disinfection
Haloacetic Acids (five) (HAA5) (µg/L)	2021	NA	60 LRAA	33 (ND – 49)	No	By-product of drinking water disinfection
LEAD AND COPPER (Lead and copper tap water samples were collected from 32 customers' homes throughout the community)						
Detected Contaminants (units)	**Sample Date**	**PHG**	**AL**	**Tap Water 90th Percentile**	**Number of Samples Exceeding AL**	**Exceeds AL**	**Major Source in Drinking Water**
Copper (mg/L)	2021	0.3	1.3	0.3	0/32	No	Internal corrosion of household plumbing systems; leaching from wood preservatives
Lead (µg/L)	2021	0.2	15	<2	0/32	No	Internal corrosion of household plumbing systems; discharges from industrial manufac-turers; erosion of natural deposits

Questions? Contact SCWD

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Learn more and get involved

Get additional information about SCWD including Water Conservation, Loch Lomond Recreation Area, engineering projects and more on the **City's website**.

Customers are invited to attend City Council and **Water Commission meetings**. Water Commission meetings are held the first Monday of each month at 7 p.m. Visit the **SCWD website** or call (831) 420-5200 to find out more.

Additional information about drinking water safety and standards is available from the **State Board** and the **USEPA**.

Learn how **drinking water standards** are established.

CITY OF SANTA CRUZ
Water Department

Our Water, Our Future