

# WELCOME

#### Report on Public Health Goals

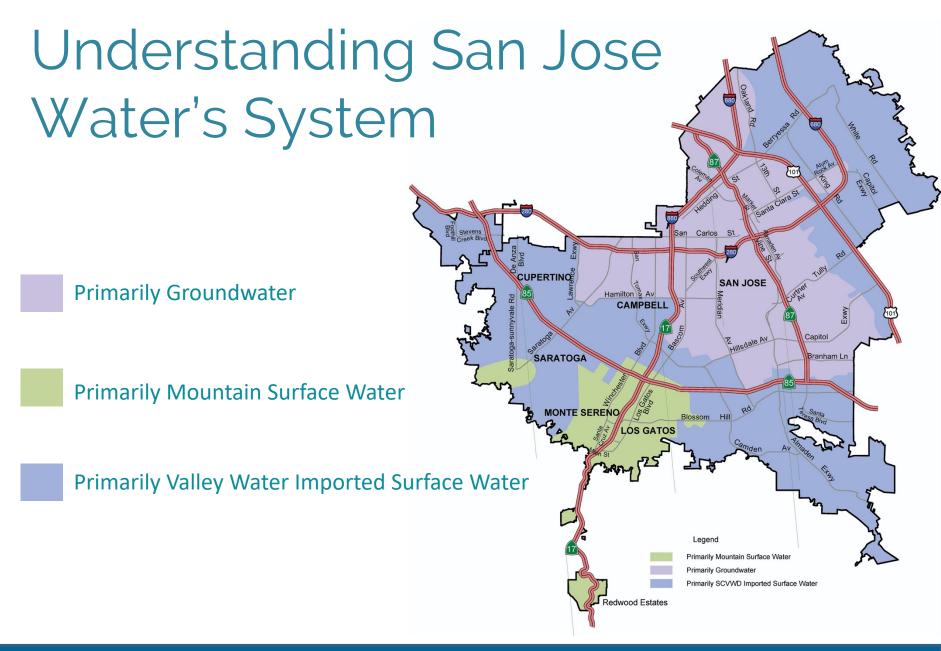
October 12, 2022



Suzanne DeLorenzo, PhD Director of Water Quality



- Welcome
- SJW's System and General Water Quality
- About Public Health Goals
   (PHG)
- Constituents Detected above a PHG
  - Groundwater
  - Surface Water
    - Plumbing Components
- Conclusion





### Characteristics of Different Water Sources

#### Groundwater

- Collected from the Santa Clara Valley Aquifer
- 19 well stations
- Higher mineral content than surface water
- Very hard water

#### Mountain Surface Water

- Water collected from Los Gatos Watershed
- Treated at Montevina Water Treatment Plant (WTP)
- Low mineral count
- Hard water

#### Valley Water Surface Water

- Imported water
- Treated at Rinconada, Santa Teresa, or Penitencia WTPs
- Low mineral count
- Moderately hard to hard water





The Water Quality Department maintains a vigorous monitoring program dedicated to providing high quality drinking water to our customers.

In 2021, our highly experienced staff collected more than 1,000 regulatory and non-regulatory samples from our distribution system and treatment plant, generating over 23,000 data points.



## About Public Health Goals

A Public Health Goal (PHG) is the concentration of a contaminant in drinking water that poses no significant health risk if consumed for a lifetime.

PHGs are developed and published by the Office of Environmental Health Hazard Assessment (OEHHA).

1996 Calderon-Sher Safe Drinking Water Act

- Requires OEHHA to publish PHGs based on most current scientific methods.
- Requires water providers to prepare a report every three years for containments that exceed a PHG.



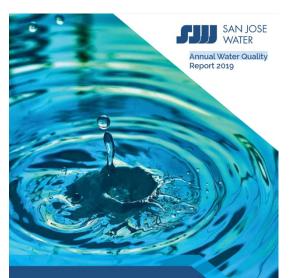
SCIENCE FOR A HEALTHY CALIFORNIA



### Water Quality Data Considered

All water quality data collected by SJW for purposes of determining compliance with drinking water standards in 2019, 2020, and 2021 was considered for these reports.

#### 2019



#### Clean Water for Our Customers



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#### 2020



#### Clean Water for Our Customers



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#### 2021







## Important Terminology

#### **Public Health Goal (PHG)**

• Level of constituent in drinking water that would not cause significant adverse health effects in people who drink two liters of that water every day for 70 years. CA-specific and determined by OEHHA.

#### Maximum Contaminant Level (MCL)

- Legal threshold for contaminant in drinking water.
- Factors considered include analytical detection capability, treatment technology, benefits and costs.
- Set by USEPA OR CA Division of Drinking Water.

#### **Maximum Contaminant Level Goal (MCLG)**

• EPA version of PHG for Federal Standards.

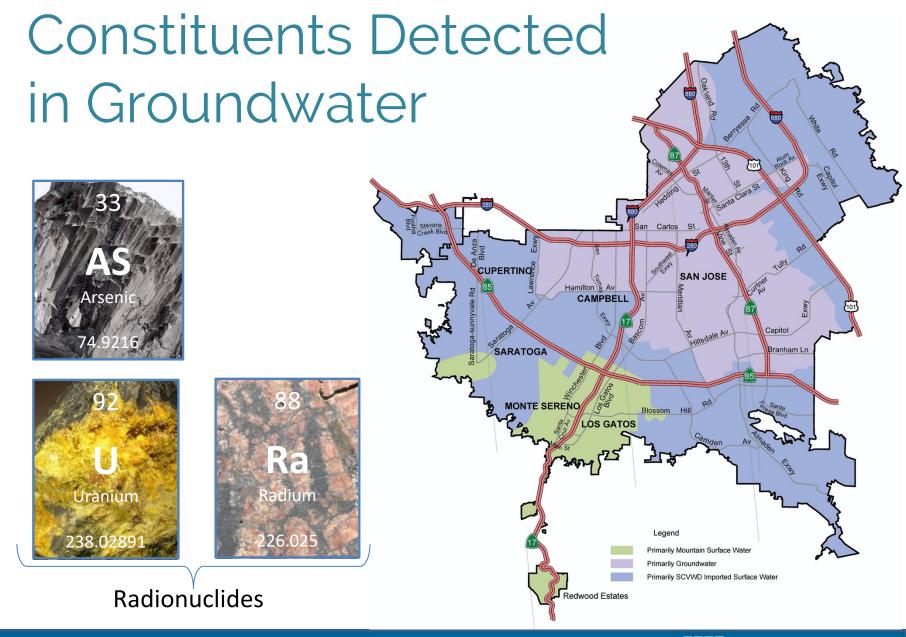


# Constituents Detected that Exceed a PHG or a MCLG

Contaminant	Sample Date	Unit	CA MCL/AL	PHG/MCLG	Detections
Arsenic	2019-2021	mg/L	0.01	0.000004	ND - 0.004
Uranium	2019-2021	pCi/L	20	0.43	ND – 1.3
Radium 228	2019	pCi/L	5 pCi/L (Combined Ra226 + 228)	0.019	ND – 2.6
Bromate	2019-2021	mg/L	0.01	0.0001	ND - 0.008
Lead	2019-2021	mg/L	0.015*	0.0002	ND - 0.006

\*90th percentile numbers determined by Lead and Copper Rule Monitoring

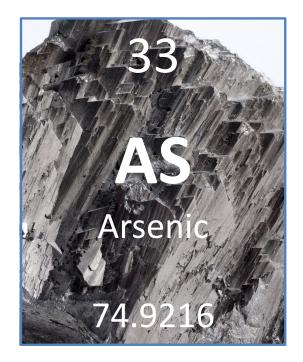




#### SAN JOSE WATER

## Arsenic

- Naturally occurring element found in the earth's crust.
- Exposure over a long period of time is associated with:
  - Diabetes
  - Increased risk of cancers
    - Bladder, lungs, liver and other organs



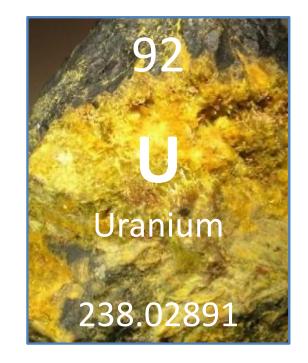
Monitoring conducted at all groundwater wells within San Jose Water's distribution system ranged from ND to 0.004 mg/L (above the PHG for arsenic of 0.000004 mg/L).

All results are well below the current federal MCL of 10 mg/L and the CA MCL of 0.01 mg/L.



## Uranium

- Naturally occurring radioactive element in rocks and soil from the earth's crust.
- Groundwater dissolves minerals as it flows and can pick up uranium.
- Exposure to uranium over a long period may result in increased risk of disease such as:
  - Bone cancer, lymphoma, leukemia, and aplastic anemia



Monitoring conducted at all groundwater wells in SJW's distribution system ranged from ND to 1.4 pCi/L, which is above the PHG for uranium of 0.43 pCi/L.

All results are below the current CA MCL of 20 pCi/L.



## Radium 228

- Naturally occurring radioactive element found in rocks and soil.
- Most common forms found in groundwater are radium 226 (Ra-226) and radium 228 (Ra-228).
- Exposure to radium over a long period may result in increased risk of:
  - Bone cancer, lymphoma, leukemia, and aplastic anemia



Monitoring conducted at all groundwater wells in SJW's distribution system ranged from ND to 2.6 pCi/L, which is above the 0.019 piC/L PHG for radium 228.

All results are below the current MCL for combined radium 226 +228, which is 5 piC/L.



# Best Available Technologies (BATs) for Removing Constituents

Arsenic

 Activated alumina, ion exchange (IX), lime softening, coagulation/filtration and reverse osmosis (RO)

Uranium and Radium

• Ion exchange (IX), reverse osmosis (RO), lime softening, or coagulation/filtration

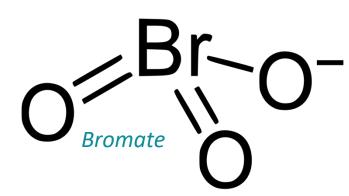


## For the purpose of cost estimation, IX was selected as the treatment method for constituents below the PHG.

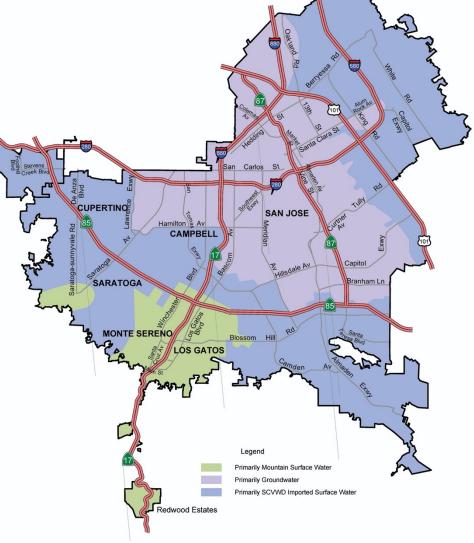
The estimated cost to install and operate an IX treatment system to reliably reduce arsenic, uranium, and radium levels to zero would be approximately \$28,800,000; this includes constructing with additional O&M costs of \$324/MG and an annual O&M of \$900,000/year.



# Constituents Detected in Surface Water



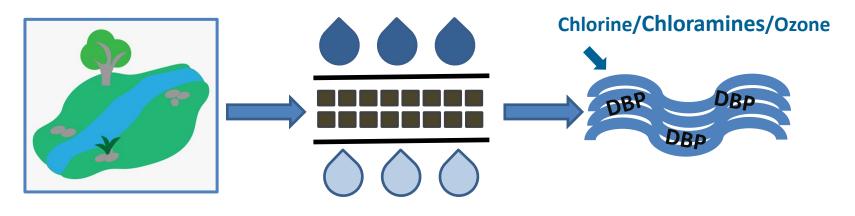
**Disinfection Byproducts** 





## Disinfection Byproducts (DBPs)

• Molecules that form when chlorine reacts with naturally occurring organic matter in the water



Total organic carbon from natural sources, like decomposing plants, washes into rivers and reservoirs. Water treatment plants filter water drawn from these supplies, but some carbon can remain after the process.

At the water treatment plant disinfectants are added to the water to keep microbes from growing. The disinfectants can react with leftover carbon in the system to form DBPs.



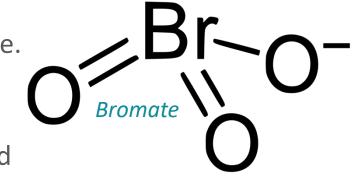
## Bromate

- Formed when ozone reacts with naturally occurring compounds that contain bromide.
- Organic matter, pH, and temperature all affect the amount formed.
- Long-term exposure linked to an increased risk of cancer and kidney disease.
- The USEPA set the MCL at 0.01 mg/L
  - Level significantly lower than that at which any known health effects occur.

Samples from Valley Water surface water within SJW's distribution system occasionally exceeded PHG of 0.00001.

• Samples ranged from ND to 0.008 mg/L.

All results are well under the MCL of 0.01 mg/L.





## Other Types of DBPs

	SJW DISTRIBUTION SYSTEM SAMPLES								
	DISINFECTION		MRDL	MRDLG	RUNNING ANNUAL AVERAGE				
	Total Chlorine	ppm	4.o as Cl₂	4 as Cl₂	1.45		12		
	DISINFECTION BY PRODUCTS		MCL	PHG		HIGHEST SITE AVERAGE	RANGE		
	Total Trihalomethanes	ppb	80	N/A	Samples Collected at Designated	57	2.8 - 82.6	7	
-	Haloacetic Acids	ppb	60	N/A	Sample Points:	49	ND - 60.2	7	
	MICROBIOLOGICAL CONTAMINANTS		HOL	HOLO		AVERAGE 70	HIGHEST MONTHLY %		
	Coliform Bacteria*	%	> 5% of monthly samples positive	۰	Samples Collected at Designated Sample Points:	0.38%	0.92%	8	
	LEAD AND COPPER		AL	PHG		90th PERCENTILE LEVEL	SITES ABOVE AL		
	Lead	ppb	15	0.2	Samples Collected at	< 5	2	1, 10	
0	Copper	ppm	1.3	0.3	Customers' Taps (2019):	0.25	0	1, 10	

#### **Total Trihalomethanes and Haloacetic Acids**

- Formed when chlorine or chloramines interact with the natural organic materials found in water.
- The composition and levels of specific DBPs are determined by water quality, water treatment conditions, and disinfectant type.



## BATs for Removing DBPs

#### The US EPA lists BATs as:

- Optimization and control of treatment processes to reduce disinfectant demand.
- Control of disinfection treatment processes to reduce disinfectant levels.

SJW continues to control treatment processes and monitor levels of DBPs according to DDW recommendations.



Ultrafiltration modules at the Montevina Water Treatment Plant.

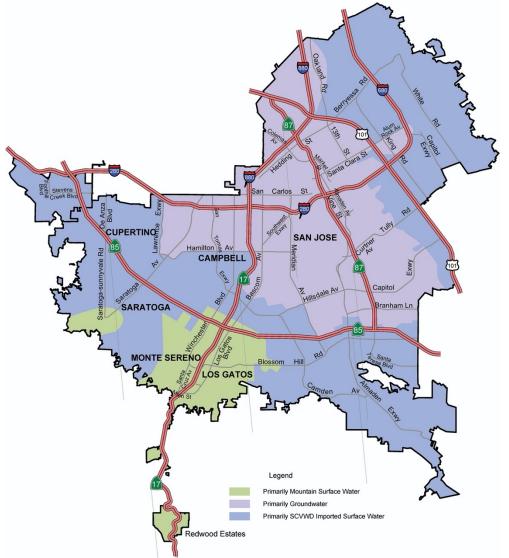
SJW has complied with all state and federal regulations regarding bromate through 2019, 2020 and 2021.



### Constituents from Plumbing Components



Copper service lines connected to a water meter





## Lead in Drinking Water

There is no MCL for lead.

Action Level of 0.015 mg/l
The PHG for lead is 0.0002 mg/L.
In our last round of testing (2019),
90th percentile values of all lead monitoring conducted were below the DLR.

Lead is rarely detected in SJW source water.

Based on extensive sampling from our customers' taps, SJW remains in full compliance with the Federal and State Lead and Copper Rule.

- In 2021, one groundwater sample among 84 collected exceeded the PHG at 0.006 mg/L.
- Follow up sampling at the location where the one PHG exceedance occurred has consistently shown levels below the PHG.



### Conclusion

The drinking water provided by San Jose Water meets all State of California and USEPA drinking water standards set to protect public health.

#### Learn More About Your Drinking Water

The 2021 Annual Water Quality Report is available at: <u>www.sjwater.com/ccr</u>

Read the full Report on Public Health Goals available on SJW's Water Quality page: <u>www.sjwater.com/customer-care/help-</u> <u>information/water-quality</u>

Visit the SJW Water Quality page for helpful FAQs.





#### Clean Water for Our Customers



## Questions?

### Thank You!

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