



# NAVAJO-GALLUP WATER SUPPLY PROJECT NEWSLETTER

February 2024

## COMMUNITY

### Navajo Nation COVID-19 Information:

**Website:** <https://ndoh.navajo-nsn.gov/covid-19>

Ph. 928-871-6350

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## GET IN TOUCH

### Questions/Comments:

Becky Begay  
Navajo Outreach  
Coordinator  
Ph. 505-408-8516  
[bbegay@usbr.gov](mailto:bbegay@usbr.gov)

### Contact us:

Bureau of Reclamation  
Four Corners  
Construction Office  
Ph. 505-324-5000  
1235 La Plata Highway  
Farmington, NM 87401

# SAFE WATER FOR ALL

## Navajo-Gallup Water Supply Project San Juan Lateral

San Juan River  
**8,000 Measurements** for water quality

Frank Chee Willetto Reservoir  
**68 Days of storage** at startup  
**28,000 Measurements** for water quality

San Juan Lateral Water Treatment Plant  
**18.8 Million** gallons per day of capacity  
**37.6 Million** gallons per day of future capacity

San Juan Lateral Wholesale Distribution System  
**109 Miles** of pipe

## Safe Drinking Water Quality

### ✓ Primary Drinking Water Standards

- ◆ No contaminants of concern are above USEPA and NNEPA regulatory limits

### ✓ Secondary Drinking Water Standards

- ◆ No water quality concerns of significance
- ◆ Tracking of manganese and aluminum occurrence will be needed

### ✓ Future Regulations

- ◆ River and Reservoir samples were all below proposed regulatory limits for PFAS

### Reservoir Storage

Reservoir storage provides the ability to shut down the river intake whenever the river water quality declines

## A Reliable Water Supply



— BUREAU OF —  
RECLAMATION

If you would like to learn more, visit our website at:  
<https://www.usbr.gov/uc/progact/navajo-gallup/>



# SAFE WATER FOR ALL: A Deeper Dive into Water Quality for the Navajo-Gallup Water Supply Project

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**By Steve Dundorf, P.E.**  
**Environmental Engineer Bureau of Reclamation**

In the previous Navajo-Gallup Water Supply Project (NGWSP) newsletter, the Four Corners Construction Office discussed the quality of the Project's water supply and the many steps taken to ensure the delivery of safe drinking water to all users. This month, I will take a deeper dive into the processes and data that were used to inform the San Juan Lateral design.

As a professional engineer (P.E.) charged with overseeing the water

treatment design and construction on the NGWSP, it is my responsibility to ensure the water you drink will be as clean as possible and meet all Federal, Navajo Nation, and State water quality regulations. In the design of any water treatment system, it is critical to study the watershed and look at anything that could contribute contamination to the water supply including naturally occurring minerals, water discharges from upstream towns, water runoff from farms or industry, mine discharges, and in the case of the Frank Chee Willetto Reservoir, impacts from

the neighboring powerplant. Additionally, we want to obtain as much water quality data as possible for the source water, which includes the reservoir and the San Juan River that is pumped to the reservoir.

## Drinking Water Regulations

To understand water quality, we must first understand a little about water quality regulations which are established by the U.S. Environmental Protection Agency (USEPA) and the Navajo Nation EPA (NNEPA) under the Safe Drinking Water Act.

## Reservoir

- More than 30,000 water quality data points
- No regulatory concerns for dissolved metals
- PFAS & PFOA concentrations are below detection limits or MCL Hazard Index

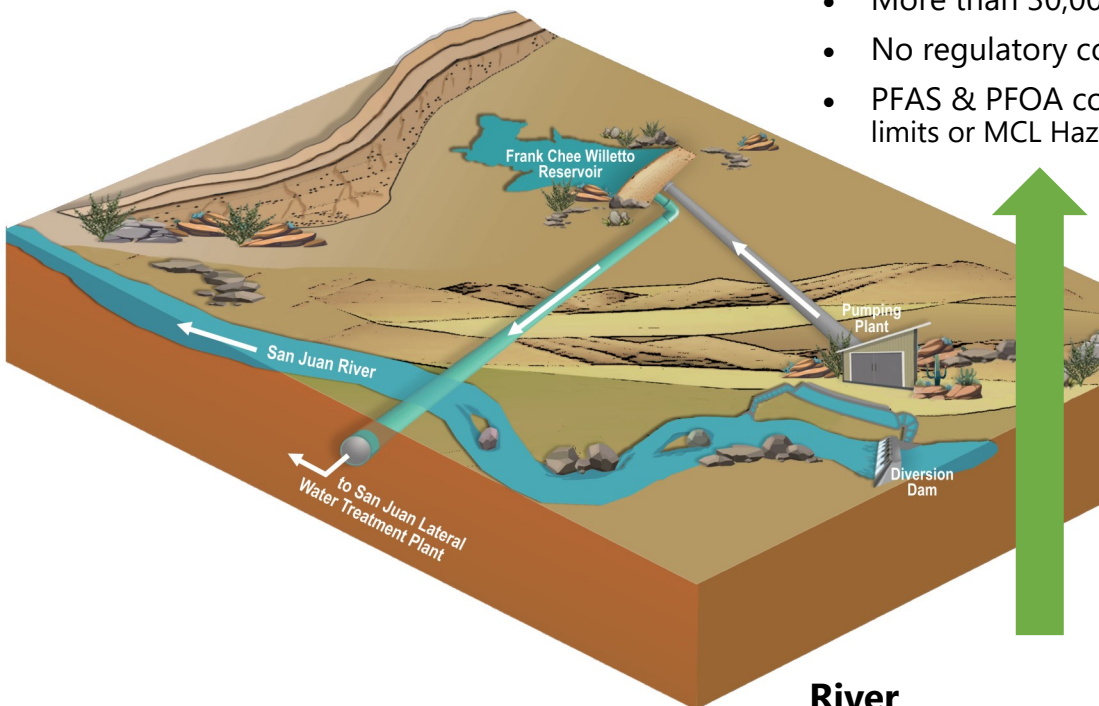
## Higher water quality in reservoir than river

Examples include:

- 99% Reduction in Total Suspended Solids
- 99% Reduction in Aluminum (total)
- 96% Reduction in Manganese (total)
- 91% Reduction in Chromium (total)

## River

- More than 8,000 water quality data points
- No regulatory concerns for dissolved metals



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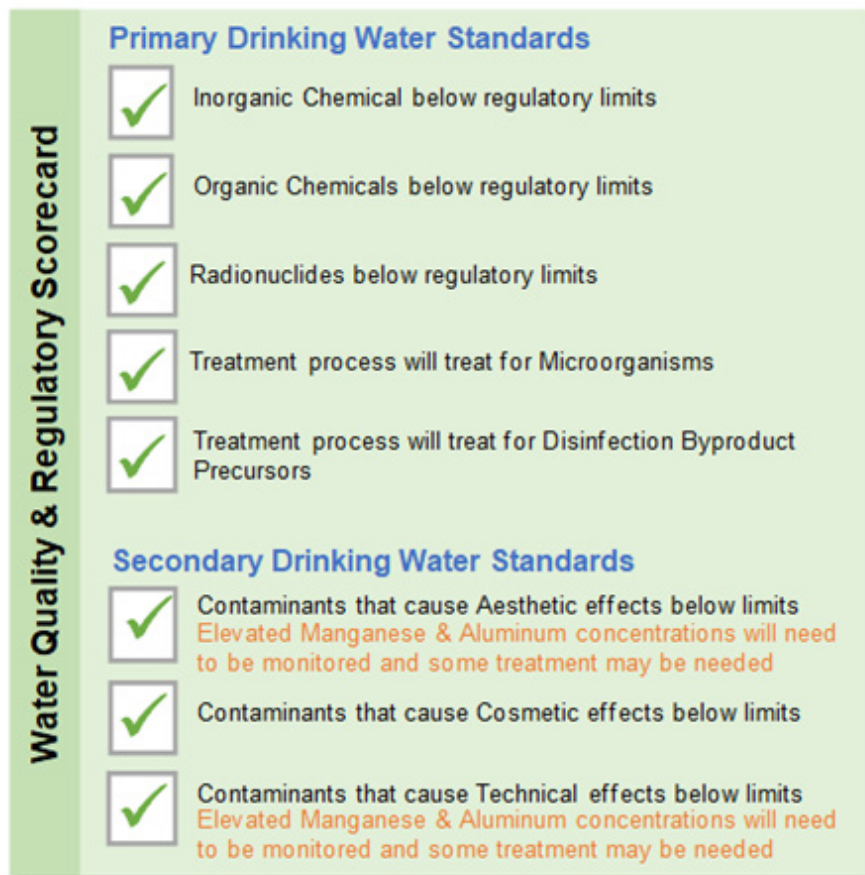
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**Primary drinking water standards** are the most important as these relate to public health and are legally enforceable. We need our treated water quality to be below these standards and the water treatment process robust enough to provide required treatment capabilities.

There are also **Secondary drinking water standards** which are non-enforceable guidelines regulating contaminants that may cause aesthetic effects (such as taste, odor, color), cosmetic effects (such as skin or tooth discoloration), or technical effects (such as increased corrosion or making treatment more expensive). We have tested the water supply for both primary and secondary drinking water standards.

## Extensive Sampling & Overall Results

Over the course of 4 years, Reclamation, working in coordination with the U.S. Geological Survey, obtained more than 8,000 water quality data points from the San Juan River and over 30,000 data points from the reservoir, which included testing of sediment from the bottom of the reservoir. The result from this rigorous sampling and testing revealed no concerns about the water quality of the San Juan River or the Frank Chee Willetto Reservoir.



## San Juan River

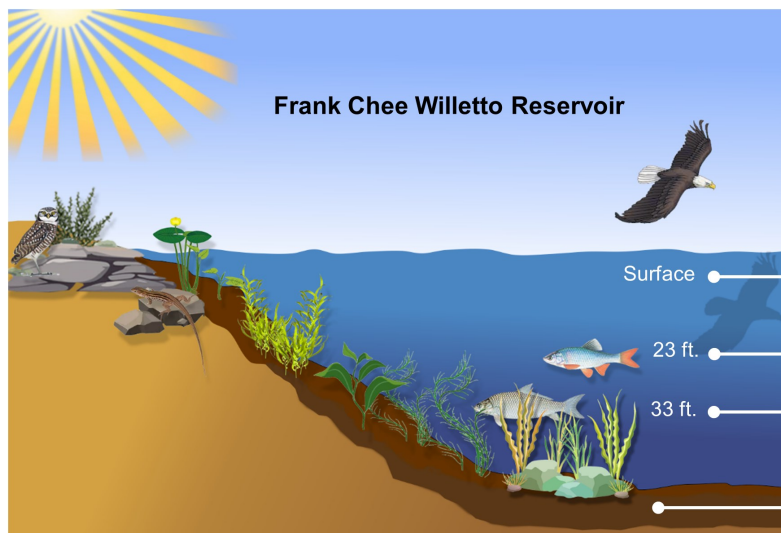
Primary regulated metals (e.g., chromium), are often naturally occurring but concentrations can increase through historic mining activities. Their presence is common in many waters in the western U.S., including the San Juan River. Fortunately, these metals are mostly in solid form and will settle out prior to treatment; they can also be easily removed by water treatment. Primary regulated metals in dissolved form, which are more difficult to treat, all meet the drinking water standards.

The San Juan River can change from clear water to very muddy

during upstream rain events. This “mud” is suspended sediment which can cause operational and treatment concerns. Fortunately, this can be controlled by shutting down the reservoir intake during storm events. Any sediment that does make it to the reservoir settles to the bottom of the reservoir. The combination of intake shutdowns and reservoir settling is the reason behind the following significant reductions between the San Juan River and the reservoir: 99% reduction in total suspended solids, a 99% reduction in total aluminum, a 96% reduction in total manganese, and a 91% reduction in total chromium.

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## Sampling over 4 years

- More than 28,000 data points collected at different depths including: temperature, pH, dissolved oxygen, ORP, specific conductivity, and turbidity
- 171 unique water quality parameters sampled
- 40 core samples of sediment

Sampling at 3 different depths

Sediment sampling

## Frank Chee Willetto Reservoir

The Frank Chee Willetto Reservoir serves as a reliable source of water when we need to shutdown the river intake pumps.

Water column samples were collected at many different locations and water depths to discern any changes in water quality through the reservoir at different times of the year.

Sediment core samples were collected at four locations across the reservoir and put through the harshest of testing conditions. The result of all this sampling and testing was a high level of confidence that the powerplant had no lasting impact on the reservoir and water quality, and the reservoir water is safe to drink after standard water treatment.

## Safe Water

It is Reclamation's responsibility to thoroughly investigate any potential concerns with the water supply, and to develop solutions if issues are found. Following our

extensive water quality testing, we are not concerned about regulated contaminants such as metals, radionuclides, microbial contaminants, organic chemicals, or for perfluoroalkyl and polyfluoroalkyl (PFAS) concentrations based on forthcoming EPA regulations in the NGWSP water supply. For more information on PFAS, visit [www.EPA.gov/pfas](http://www.EPA.gov/pfas).

We will continue to monitor elements that are regulated under primary and secondary drinking water standards, especially if found at elevated concentrations. Based on our source water assessment, manganese and aluminum may require additional treatment. As required for all surface waters, natural organic material will also be removed through our robust water treatment system, which is capable of addressing any of these concerns. The safety of our water users is our top priority. We have the utmost confidence in the

water quality and the water treatment process on the NGWSP. We will continue to be available to discuss or address any questions you may have on water quality and treatment. Please contact Becky Begay at [bbegay@usbr.gov](mailto:bbegay@usbr.gov) and your questions will be directed to the appropriate office for response.

*See page 7 for additional information and statistics regarding the water testing at the San Juan River and Frank Chee Willetto Reservoir.*

## Helpful links

### Drinking water standards:

- [www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations](http://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations)
- [www.epa.gov/sdwa/secondary-drinking-water-standards-guidance-nuisance-chemicals](http://www.epa.gov/sdwa/secondary-drinking-water-standards-guidance-nuisance-chemicals)
- <https://navajopublicwater.navajonnsn.gov/NNPDWA>

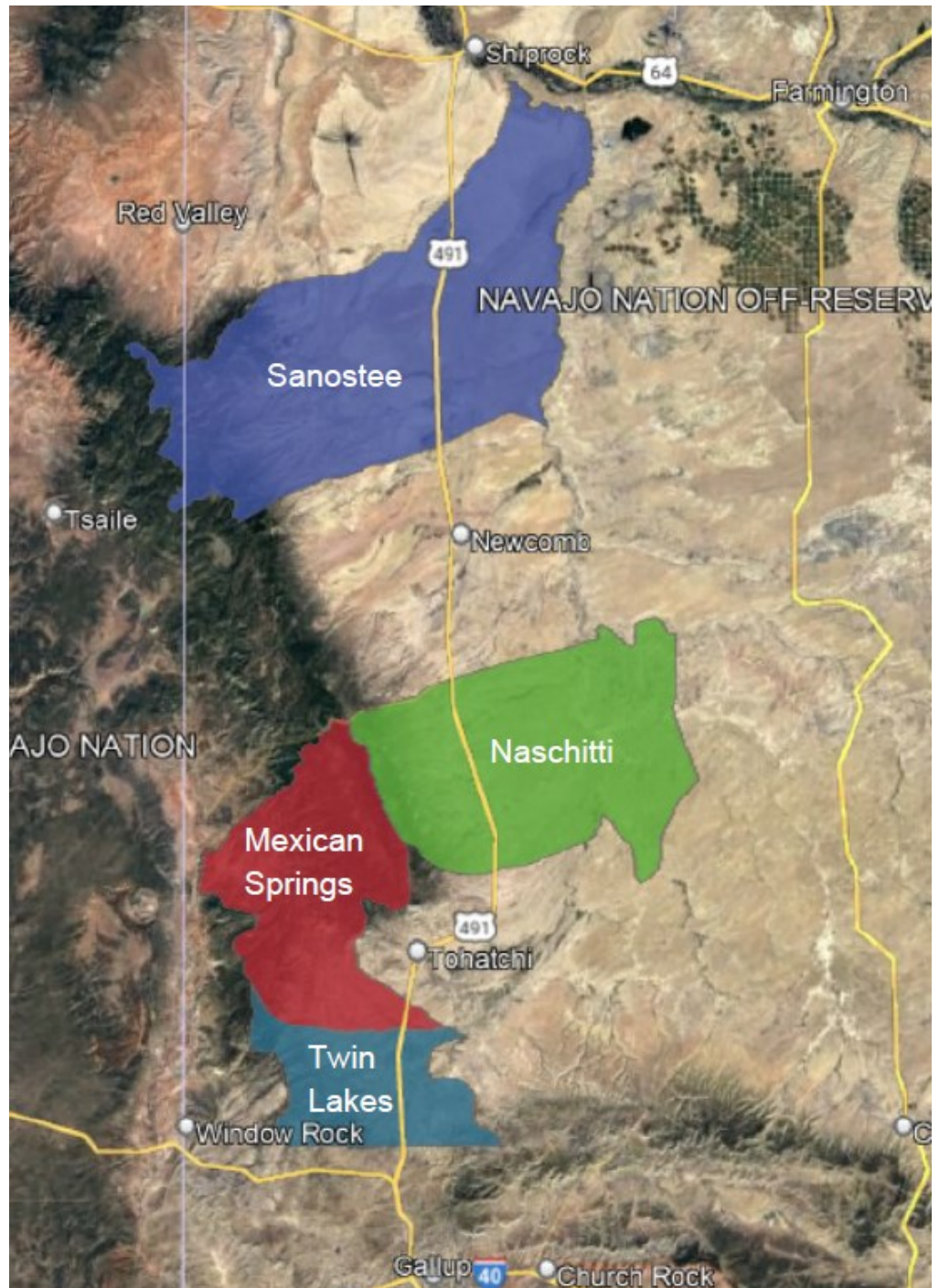
# Why is NGWSP an Important Project to the Navajo Chapters?

**By Hubert (Chico) Quintana,  
Civil Engineer, Bureau of  
Reclamation**

The Navajo Gallup Water Supply Project is designed to deliver safe, clean, and reliable drinking water to the 43 Navajo chapters within the Project Service Area in western New Mexico and the Window Rock and Fort Defiance area in east-central Arizona. The future delivery of a drinking water supply throughout this portion of the reservation poses a great opportunity for the communities to plan for many developments and improvements that have not been possible with limited water sources. Through an ongoing planning outreach work group, Reclamation communicates construction updates and plans with chapters along NM 491 who will receive treated water from the San Juan Lateral of the NGWSP.

The chapters are excited about development and shared some of their plans for 2028 and 2029 when water is scheduled to reach their community.

Twin Lakes Chapter Coordinator Juanita Tom said her chapter plans to expand the current service area and extend the waterline out further to provide water to more community residents. She also mentioned that the chapter plans to look into additional housing, depending on the availability of funding from the American Rescue Plan Act of 2021 (ARPA) and Indian Health Services (IHS).



Generally, the development plans of the Mexican Springs community are focused on the improvement of living conditions. Mexican Springs Chapter Coordinator Christine Sam said that her community plans to find funding to build a new community center which will host future Chapter meetings and community events. The community would like to

provide more housing through the Navajo Housing Authority (NHA), however, this will require more area residents to apply for the NHA housing to allow more consideration for the funding of such projects. The NGWSP would be able to supply the water necessary for these larger housing projects.

# Why is NGWSP an Important Project to the Navajo Chapters?

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The Naschitti Chapter has plans for a new multipurpose facility, and an economic development corridor filled with business buildings. Naschitti Chapter Manager Carissa Wood also mentioned that their chapter plans to pursue the possibility of future NHA Housing Projects for the community.

Sanostee Chapter Coordinator Dexter Begay shared plans to secure a 100-acre plot of land

from the Navajo Nation for the construction of a Chapter compound with a new community multipurpose building, Chapter house, and possibly a new cemetery. There was also mention of a new Chapter building. The Sanostee Chapter building currently is approximately 8.8 miles west of Hwy 491. The new compound will be located next to Hwy 491 near its intersection with Route 34 within the Sanostee Chapter area.

As the 2029 completion date for NGWSP nears, the various plans for community development ideas will continue to approach reality. Community members and Reclamation look forward to hearing more about these and other exciting opportunities afforded by clean and reliable drinking water access to Navajo Nation communities.

## Faces of NGWSP

Yá'át'ééh, my name is Kristin Bowen, and I am the environmental and cultural group chief in the Bureau of Reclamation's Western Colorado Area Office. I grew up in multiple places as my father was in the U.S. Air Force, but I consider myself from Montana. I now live in Bayfield, Colorado with my two children.

I received my master's degree in anthropology from the University of Montana, and previously I was an archaeologist working for other federal agencies in Colorado, New Mexico, Montana, and Nevada. In my current position I manage a team of staff that provide the environmental and cultural resource compliance for the Navajo-Gallup Water Supply Project.

Reclamation archaeologists, environmental specialists, and design engineers work together to address affects to resources important to the Navajo Nation. Resources such as traditional cultural properties are avoided as much as possible through

the redesign of the Navajo-Gallup Water Supply Project's features. I find the work my team and I do to be extremely rewarding as we do our part to bring water to people who need it.



## Community Meetings

- **Project Construction Committee (PCC)**  
Location: El Moro Event Center, Gallup, NM  
April 25, 2024  
9 a.m. - 12 p.m.

- **Beacon Bisti/N9-BBN9 Meeting**  
Location: Ojo Encino Chapter House  
March 6, 2024  
10 a.m. - 12 p.m.

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If you appreciate numbers and statistics, here are a few:

<p><b>San Juan River</b></p>	<p>8472 data points take in the San Juan River between Fruitland Bridge and the Hogback Diversion.</p> <p>3 sampling events for PFAS testing for 19 compounds</p>
<p><b>Frank Chee Willetto Reservoir water</b></p>	<p>28,000+ data points collected at different depths including: temperature, pH, dissolved oxygen, specific conductivity, and turbidity</p>
<p><b>Frank Chee Willetto Reservoir sediment</b></p>	<p>40 core samples analyzing the elemental chemistry for sediment</p> <p>245 organic contaminant data points for sediment cores including: Total Oil and Grease, Organochlorine Pesticides, Polychlorinated Biphenyls, PFAS, and volatile organic compounds</p> <p>5 samples analyzing the elemental chemistry for sediment pore water</p>
<p><b>% Reductions from River to Reservoir</b> managed through both shutting down the reservoir intake during periods of high suspended sediment (muddy water) and through natural settling in the reservoir. Frank Chee Willetto Reservoir provides significant pre-treatment (as shown to the right) prior to the water treatment plant.</p>	<p><b>General Water Quality Parameters or Constituents with Secondary Regulated Concentrations</b></p> <p>Total Organic Carbon: 57.1%</p> <p>Color (dissolved) 53.5%</p> <p>Total Suspended Solids: 99.7%</p> <p>Aluminum (total): 99.4%, (dissolved): 62.2%</p> <p>Iron (total): 98.5%, (dissolved): 70.8%</p> <p>Manganese (total): 96.5%</p> <p>Nickel (total): 84.9%</p> <p>Strontium (total): 16.7%</p> <p><b>Metals with Regulated Concentrations</b></p> <p>Cobalt (dissolved): 35.8%</p> <p>Arsenic (total): 75.5%</p> <p>Barium (total): 82.6%</p> <p>Beryllium (total): 77.8%</p> <p>Chromium (total): 91.6%</p> <p>Copper (total): 95.6%</p> <p>Lead (total): 97.8%</p> <p>Selenium (total): 21.2%</p> <p>Nitrate: 52.7%</p> <p><b>Radionuclides with Regulated Concentrations</b></p> <p>Radium-228: 28.3%</p> <p>Gross Alpha: 70.9%</p> <p>Uranium: 53.5%</p> <p><b>Microbial Contaminants with Regulated Concentrations</b></p> <p>Coliforms (Total): 75.6%, (Fecal): 90.5%</p> <p>E. Coli: 91.9%</p>