

Frequently Asked Questions

What is the problem?

Northern Water discovered uranium at the Chimney Hollow Reservoir site.

Where does the uranium come from?

Uranium is naturally occurring in some of the rocks found at the site. Those rocks were quarried, crushed and used to build the embankments that make up Chimney Hollow Reservoir.

When was the uranium first detected?

Initial Uranium Monitoring

Uranium monitoring began in December 2021 under the requirements of the short-term construction discharge permit. Through spring 2023, uranium concentrations at the water treatment plant outfall remained below 30 µg/L, and often below 10 µg/L.

Extreme Precipitation Events (May-June 2023)

In May and June 2023, the site experienced unusually heavy precipitation, including a storm that delivered approximately 2.5 inches of rain. These events overwhelmed stormwater controls and led to emergency discharges from the site into Chimney Hollow Creek and Flatiron Reservoir.

Out of concern for potential impacts to downstream receiving waters, Northern Water proactively initiated additional water sampling at four sites. This monitoring started a baseline of data collection that continued afterward.

What is uranium?

Uranium is a weakly radioactive heavy metal that occurs naturally. Rocks, soil, surface and ground water, air, plants, and animals (including humans) all contain varying amounts of uranium. Some geographical regions of the United States, particularly southwestern states such as Colorado and New Mexico, have concentrated natural deposits of uranium and extensive historic uranium ore mining and milling activities. For these reasons, some areas may have higher than average uranium levels, which may result in increased human exposure. Naturally occurring uranium emits very low levels of radioactivity that travel only short distances and cannot penetrate human skin. In its natural, unprocessed state, chemical toxicity via long-term ingestion or inhalation is the primary health concern, not radioactivity.

NATURALLY OCCURRING URANIUM FOUND ON SITE

What is Northern Water going to do about it?

Northern Water and Chimney Hollow Reservoir Project participants are engaged in characterizing the issue as well as developing mitigation strategies which may include blending Chimney Hollow Reservoir releases with other sources and using treatment options to reduce uranium concentrations. Northern Water will develop a comprehensive operational plan to ensure a safe water supply for all Windy Gap and C-BT allottees. Comprehensive monitoring will occur to validate operational strategies and confirm that uranium concentrations in released water are within an acceptable range.

Our Commitment to You

This is an evolving situation and Northern Water is committed to keeping the public informed as we monitor and manage naturally occurring uranium at Chimney Hollow Reservoir. Please stay tuned for updates and visit chimneyhollow.org for more information about the project.



Why did you just learn about this recently?

Elevated levels of uranium were first detected in samples taken in May 2023 during emergency discharges from the site caused by unusually heavy rainfall. Although uranium monitoring had been ongoing since December 2021 under a construction site discharge permit, it had not previously been a concern due to consistently low levels. In response to the emergency discharge, Northern Water proactively initiated additional water quality sampling, which led to the detection of elevated uranium levels—specifically, 225 micrograms per liter ($\mu\text{g/L}$) in a sample collected from the site.

However, this initial detection did not fully reveal the scope of the issue. Uranium levels throughout the remainder of 2023 and into early 2024 were only episodically elevated and returned to lower levels after the initial spike. Because the source of the uranium was unknown and the elevated levels were not sustained, the issue did not appear to be ongoing at that time.

In spring 2024, a second emergency discharge event from the site occurred, and this time uranium levels rose again—more consistently and at higher concentrations. This resurgence prompted a formal investigation into the source of the uranium. Despite expanded sampling and sediment testing throughout 2024, early efforts did not identify a clear cause. It was not until January–February 2025 that a potential source—naturally sheared granitic rock processed during construction—was suspected. This was confirmed through leaching tests conducted in February–March 2025, which demonstrated that uranium could leach from construction materials into the reservoir water.

What do the preliminary data say?

Preliminary data from ongoing water quality testing indicate a risk of elevated uranium concentrations in Chimney Hollow Reservoir above the water supply standard. The duration of this risk is uncertain and is under investigation and is expected to decrease over time. Investigations have clearly indicated granitic rock used to provide material from the quarry as the source of uranium. No water will be delivered from Chimney Hollow Reservoir until all assessments are complete, and a mitigation plan is developed to ensure a safe water supply.

Are you planning on putting water into the reservoir soon?

We are evaluating the first fill schedule in light of this discovery.

When will water come out of the reservoir?

No water will be delivered from Chimney Hollow Reservoir until all assessments are complete, and a mitigation plan is developed to ensure a safe water supply.

If drinking water systems have to treat their water, what are the regulations that apply?

Colorado's Primary Drinking Water Regulations provide a maximum level for uranium in drinking water of 30 $\mu\text{g/L}$. The management of uranium from a public health perspective in a water supply is one of long-term chemical exposure through ingestion (i.e. drinking water above acceptable standards over a very long period of time), not a radioactivity risk.

Is there an exposure risk for those who worked on or visited the construction site?

Preliminary data collected through air quality monitoring show that on-site exposure to dust is below workplace safety thresholds. The health effects of natural uranium are due to chemical toxicity through long-term ingestion or inhalation and not to radiation.

Is Chimney Hollow still going to be used for water supply?

Yes, although discovery of uranium is a setback to initial plans, it is an issue that can be safely managed and is expected to reduce over time. The new reservoir remains a valuable part of securing water supply needs for Northern Colorado and its future.

General Project Questions

What is Chimney Hollow Reservoir? A new water storage project being built on behalf of 12 project participants. It will store water from the Windy Gap Project and release it when the participants need it.

What else should I know about the reservoir? It is a product of decades of permitting and design, culminating in a 90,000 acre-foot reservoir held back by a 350-foot-tall asphalt-core dam. It will deliver water to participants through the existing Colorado-Big Thompson Project.

Why use asphalt core in the dam? Most Front Range dams have clay at their core to prevent water from seeping from the reservoir to areas downstream. Because Chimney Hollow Reservoir is in an area without enough clay to form that water-stopping barrier, engineers chose a design that uses a special type of asphaltic concrete to provide that barrier.

Why does an asphalt core matter? This speaks to the geology of Chimney Hollow. On one side of the valley are sedimentary rocks laid down hundreds of millions of years ago, and they aren't strong enough to form the rock shell around the asphalt core. On the other side of the valley are deposits of granitic rock that can be quarried and crushed into appropriate sizes to serve as the building blocks of the rock shell. Neither material is adequate for forming the core of the dam.

What are the benefits of using locally quarried granitic rock? Construction costs are reduced and we have been able to avoid trucks transporting material to the site, which benefits the environment greatly.