Rose Valley Water Service Area

Frequently Asked Questions – Summer 2024 Update

Introduction: Rose Valley Water Service Area water quality – summer 2024 update

What is the current situation?

The quality of water, from the changing conditions of the Rose Valley Reservoir into the Rose Valley Water Treatment Plant distribution system, unexpectedly resulted in increased manganese to water users (from early July through early August).

Factors such as recent extreme heat directly affecting the quality of water in the reservoir, sediment accumulation deep in the watershed and through intake pipes, and continued effects of wildfire recovery affecting the reservoir contributed to the unexpected increase in manganese and subsequent discolored water.

How is the City of West Kelowna resolving the situation?

The City is using a chemical oxidant, called hypochlorite, a form of chlorine, to help remove manganese from the water. This type of chlorine is used across Canada to treat drinking water.

Treatment began Aug. 2, 2024. As of Aug. 4, water colour had started to clear. Depending on where residents live in the Rose Valley Water Service Area, their water colour may have taken a few more days to clear.

The City continues its increased monitoring, sampling and testing throughout the system, and should manganese levels increase again, further updates will be provided, and solutions will be implemented.

About the Rose Valley Reservoir

How is the City of West Kelowna managing conditions in the reservoir?

As the City continues to recover from the unprecedented Do Not Consume Order from the McDougall Creek Wildfire, this event has demonstrated that the changing conditions in the reservoir will need to be addressed more rapidly.

The better the water is coming from the reservoir into the plant will result in a more consistent treatment process, reliable chemical expenditures and a better output of water to users.

With such a large infrastructure system, confirming the root cause of the problem took time, and remediation options to address the reservoir are both short- and long-term priorities.

Why are increased levels of manganese appearing?

The presence of manganese in the Rose Valley Reservoir is a natural occurrence.

The City is studying conditions in the reservoir to understand why manganese levels are elevated.

The City will continue monitoring the effectiveness of the treatment adjustments and determine if further changes are needed in the future.

More about manganese – conditions and cautions

What is manganese?

Manganese is a naturally occurring element that can be found in air, food, soil and drinking water.

Is manganese healthy?

People need a certain amount of manganese, but too much over a long period could be a risk to health.

For more information on manganese's health effects, refer to Health Canada's guidance.

Health Canada notes that in areas where manganese in drinking water is above the guideline, it is recommended that parents who are reconstituting formula for infants should choose an alternative source of water.

The bulk filling station at Asquith and Shannon Lake Roads is available as an alternative. Please note Shannon Lake Active Transportation Corridor construction, traffic pattern changes, and detours, and bring clean bottles for filling.

What is the maximum acceptable concentration (MAC) of manganese in water?

Health Canada's guideline for manganese in drinking water is a MAC of 0.12 mg/L. When levels are exceeded in small, short-term instances, water is typically considered safe for most people.

Has the Rose Valley Water Service Area's drinking water exceeded the MAC?

In July, some sampling stations within the current Rose Valley Water Service Area (RVWSA), marginally exceeded the MAC level for manganese, as follows, with readings in mg/L:

- July 24: 0.13 at Pettman Pump Station, 0.168 at Blackwood Pump Station, and 0.127 at Pritchard Sample Station
- July 31: 0.161 at Pettman Pump Station; 0.165 at Blackwood Pump Station and 0.132 at Horizon Sample Station

These results were shared with Interior Health. In consultation with Interior Health, water quality advisories were not required. However, out of an abundance of caution, parents who are reconstituting formula for infants may use an alternative water source.

The bulk filling station at Asquith and Shannon Lake Roads is available as an alternative. Please note Shannon Lake Active Transportation Corridor construction, traffic pattern changes, and detours, and bring clean bottles for filling.

A precautionary water quality advisory was already in place for Zone 2 of the former West Kelowna Estates System in the new Rose Valley Water Service Area, for watermain flushing, at the time; please note, the Blackwood, Horizon and Pettman stations were within Zone 2.

Will boiling my water get rid of the manganese?

No. Boiling water will not remove manganese. Residents may choose to seek an alternative source.

Current advisories – two

Are any advisories currently in effect?

Yes. The City's annual watermain flushing program is progressing, with crews now working in Zones 1 and 2 (see map – WKE01 and WKE02) of the former West Kelowna Estates System, with isolated, precautionary water quality advisories in effect in each of these two zones while the work is underway and continuing until further notice.

Health Canada notes that formula reconstituted with tap water can be a source of exposure to manganese for bottle-fed infants. In areas where the level of manganese in drinking water is above the guideline, it is recommended that parents with infants that are reconstituting formula should choose an alternative source.

An alternative source of drinking water is available at the bulk filling station at Asquith and Shannon Lake Roads. Please note Shannon Lake Active Transportation Corridor construction, traffic pattern changes, and detours remain in effect, and bring clean bottles for filling.

About Rose Valley Water Treatment Plant

Is Rose Valley Water Treatment Plant working as it should?

Yes. The community can have full confidence that the new plant is working as it should. Without the plant, this water quality from the reservoir would not be mitigated as rapidly or effectively.

What processes does the Rose Valley Water Treatment Plant use to treat water?

The new plant is a state-of-the-art facility that uses coagulation, flocculation, dissolved air flotation, filtration, ultraviolet (UV) light disinfection and chlorination (hypochlorite).

With a capacity to deliver 70 million litres of treated water per day, the three-storey, 5,245-square-metre facility serves 19,650 customers. It was also designed to increase capacity to 115 million litres per day to meet future demands.

Where can I learn more about hypochlorite and chlorine in drinking water?

The City of West Kelowna, like many cities across Canada, has used hypochlorite or other forms of chlorine to sanitize water for decades.

To learn more about chlorine in drinking water, refer to HealthLink BC's Drinking Water Chlorination Facts.

Longer-term solutions and actions

What are the next steps?

A tremendous amount of work was being done at the technical level to determine the source of the problem so correct measures could be implemented as correctly and quickly as possible.

We sincerely thank water users for their understanding while the City and its water expert team worked with Interior Health to address the issue and implement solutions.

The City continues increased monitoring, sampling and testing throughout the system, and if manganese levels increase again, updates will be provided, and solutions will be implemented.

A notice to rescind the water quality advisories for watermain flushing in Zones 1 and 2 (see map – WKE01 and WKE02) of the former West Kelowna Estates Area will be issued once the flushing and testing program is completed.

Technical options are being implemented over the next several months, such as:

- Conducting a series of bench testing that will help guide next steps
- Continual aeration: given changing conditions in the reservoir, keeping oxygen in the water will help
- Greater examination of intake pipes and where water is being drawn from to help minimize root causes stemming from the reservoir

Disinfection byproducts update – August 2024

Does the City of West Kelowna monitor for disinfection byproducts?

Yes. The City monitors, tests and analyzes the Rose Valley Water Service Area drinking water for disinfection byproducts.

Federal and provincial regulations require monitoring for disinfection byproducts and to report out when safe levels are exceeded.

Should monitoring, testing and analyses indicate unsafe levels, the City, in consultation with Interior Health, would issue the appropriate type of water quality advisory through its enotification system, website and social media. Residents may sign up at westkelownacity.ca/subscribe to receive City news and alerts directly to their inbox.

How much chlorine is in the City of West Kelowna's drinking water?

Chlorine residuals generally fall within the 0.04 to 2.0 mg/L range, which is the expected free chlorine concentration range in most Canadian drinking water distribution systems.

What are the disinfection byproducts from chlorination?

Health Canada states that most drinking water utilities in Canada use some form of chlorine as an essential component to disinfect the water directly at the treatment plant and to maintain chlorine residual within the distribution system to prevent bacterial regrowth. Trihalomethanes (THMs) and haloacetic acids (HAAs) are a group of compounds that can form when the chlorine used for disinfection reacts with naturally occurring organic matter in water. Health Canada also states that health risks associated with chlorine disinfection byproducts are much less than those associated with consuming inadequately disinfected water.

Health Canada states that the maximum acceptable concentration (MAC) is 0.100 mg/L for THM, and 0.08 mg/L for HAA, based on **annual** averages. An occasional, slight MAC exceedance does not warrant a water quality advisory.

On Aug. 6, the THM reading at the Rose Valley Water Treatment Plant vault was 0.125 or .025 mg/L above the MAC. This one MAC exceedance did not require an advisory because the requirements for THMs and HAAs are based on **annual** averages. City monitoring will continue, as always.

Do disinfection byproducts pose health concerns?

Health Canada states that health risks associated with chlorine disinfection byproducts are much less than those associated with consuming inadequately disinfected water.

Health Canada and the B.C. Ministry of Health provide information about disinfection byproducts, and residents should reference this information directly and consult with their doctors or health professionals if they have further questions or concerns related to personal or family medical needs:

- Health Canada – Disinfection byproducts in drinking water
- HealthLink BC – Drinking water chlorination facts

Learn more

Where can I find more information?

The Guidelines for Drinking Water in Canada can be found at:

- Guidelines for Canadian Drinking Water Quality

The City of West Kelowna provides updates at:

- westkelownacity.ca/waterquality

Residents can sign up to receive City news and alerts directly to their inbox at:

- westkelownacity.ca/subscribe

For more information on manganese, from Health Canada, please visit:

- Water Talk - Manganese in drinking water - Canada.ca

HealthLink BC also provides information on manganese in drinking water at:

- Manganese in Drinking Water

HealthLink BC also provides facts on chlorination in drinking water at:

- Drinking Water Chlorination Facts