Canada's Tournament Capital

CITY OF KAMLOOPS DRINKING WATER ANNUAL REPORT 2025

Facility Number: 0660340

City of Kamloops

June 2026

1. Introduction

This report has been prepared in accordance with the British Columbia *Drinking Water Protection Act* (DWPA) and the City of Kamloops' Operating Permit. It provides a comprehensive overview of the City's water treatment and distribution system, including total water consumption and a detailed analysis of water quality. The report also outlines ongoing projects and key operational activities.

The final version has been submitted to Interior Health for review and is publicly available on the City's official website, ensuring transparency and easy access to important information.

2. Kamloops Water System

The City's drinking water system consists of a single treatment plant that serves a vast distribution network, supplying water to the entire community. However, the Rayleigh and Heffley Creek Waterworks Districts operate independent systems, sourcing their water from the North Thompson River.

At the core of the City's water treatment infrastructure is the Kamloops Centre for Water Quality (KCWQ), a state-of-the-art ultra-filtration membrane treatment facility. This facility ensures safe, high-quality water by treating it with chlorination before distribution.

Both the water treatment and distribution/storage systems have been assessed and classified as Level IV under the Environmental Operators Certification Program (EOCP). As a result, their operation requires highly trained and certified personnel.

2.1 EOCP Certified Operators

The City employs a full team of certified professionals to ensure the safe treatment and distribution of potable water throughout Kamloops. Table 1 provides an overview of staffing levels for EOCP-certified water treatment and distribution operators.

Table 1: City of Kamloops Operator Certification Levels in 2025

Certification	Level	Number of Certified Operators
Water Treatment	I	1
	II	2
	III	2
	IV	4
Water Distribution	I	1
	II	1
	III	9
	IV	2
Total		22

2.2 Kamloops Centre for Water Quality

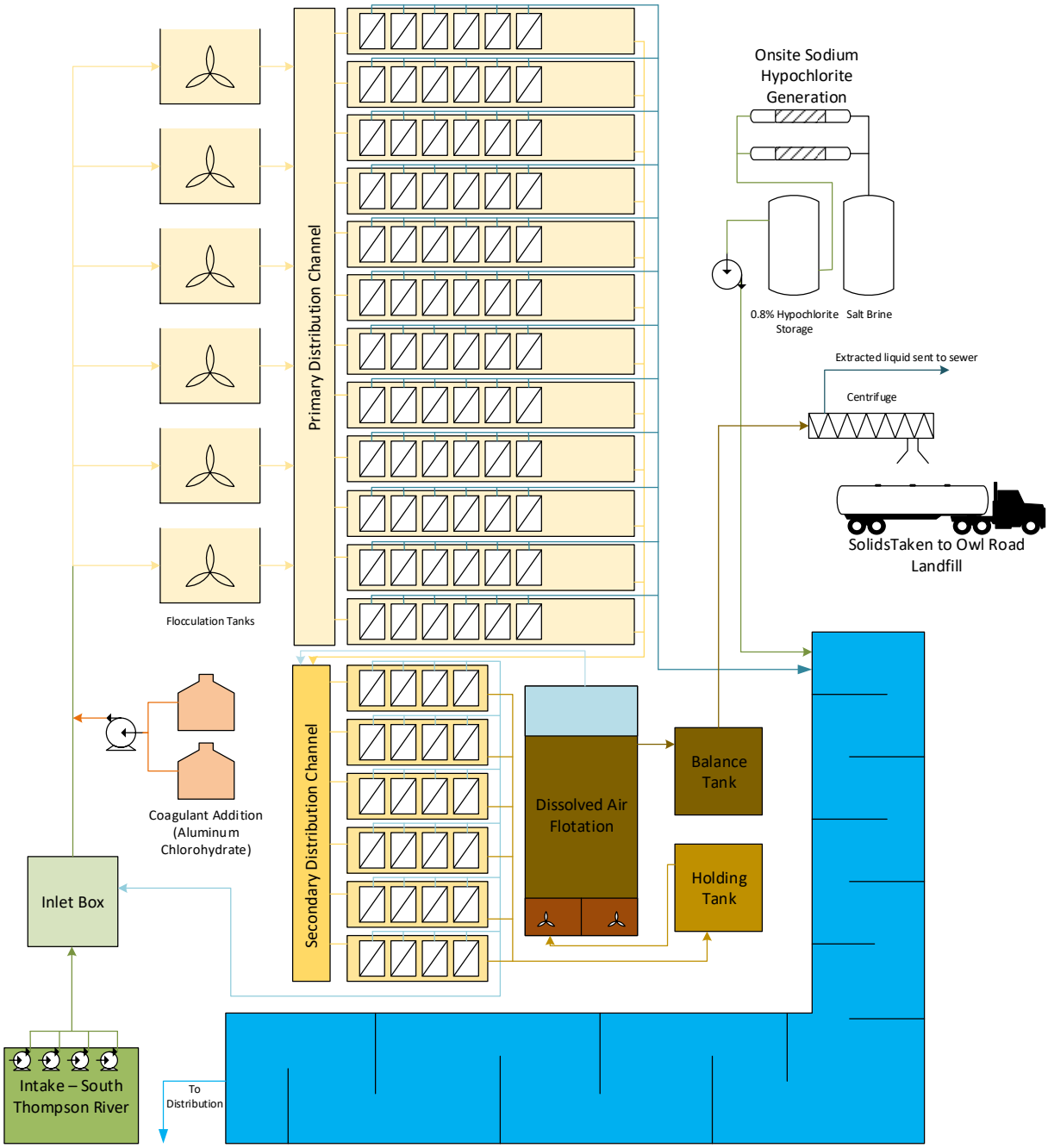
KCWQ sources water from the South Thompson River, supplying drinking water to most of the city. Using advanced Veolia ZeeWeed 500D ultra-filtration membrane technology, the facility can produce up to 160,000 cubic meters per day (160 million litres per day, MLD).

KCWQ is recognized for its commitment to environmental sustainability, holding a prestigious Gold certification from the Leadership in Energy and Environmental Design (LEED) program. Notably, 99.99% of the water treated at the facility meets stringent safe drinking water standards.

After filtration, the recovered solids are transferred to the City's Owl Road Resource Recovery Centre, where they are repurposed as clean cover, supporting the City's sustainable resource management efforts.

A layout of KCWQ and its treatment process is shown in Figure 1.

Figure 1: The KCWQ Plant Processes



2.2.1 KCWQ Water Production Totals

Over the past five years, water production at the KCWQ ranged from 18,398,058 m³ to 20,004,839 m³. In 2025, total production remained consistent with the five-year average. Table 2 and Figure 2 illustrate the monthly total water consumption over this period.

Table 2: Monthly KCWQ Water Production Volumes for the Past Five Years

Month	Total Production (m^3)					5-Year Average
	2025	2024	2023	2022	2021	
January	959,320	989,091	1,009,243	986,537	926,492	974,137
February	870,852	910,135	869,803	884,952	837,180	874,584
March	951,780	1,004,997	975,044	973,188	942,894	969,581
April	1,223,979	1,318,903	1,160,966	1,170,347	1,332,908	1,241,421
May	2,030,187	1,888,358	2,182,062	1,752,480	2,153,131	2,001,244
June	2,422,938	2,099,819	2,624,288	1,899,884	2,833,400	2,376,066
July	2,569,863	2,861,322	2,931,566	2,796,810	3,421,547	2,916,222
August	2,620,071	2,544,311	2,135,318	2,946,521	2,654,901	2,580,224
September	2,196,290	1,905,339	1,420,435	2,120,876	1,745,439	1,877,676
October	1,206,975	1,163,332	1,168,232	1,336,219	1,173,299	1,209,611
November	943,619	950,070	953,510	998,349	985,269	966,163
December	963,390	960,442	967,591	1,051,439	998,380	988,248
Total	*18,959,264*	*18,596,119*	*18,398,058*	*18,917,602*	*20,004,839*	*18,975,176*
Daily Average	*51,943*	*50,809*	*50,406*	*51,829*	*54,808*	*51,959*
Daily Peak	104,009	117,779	109,161	111,688	138,446	
Peak Date	08-Jun	21-Jul	08-Jun	28-Jul	30-Jun	

Figure 2: Graphical Representation of the Monthly KCWQ Water Production Volumes for the Past Five Years

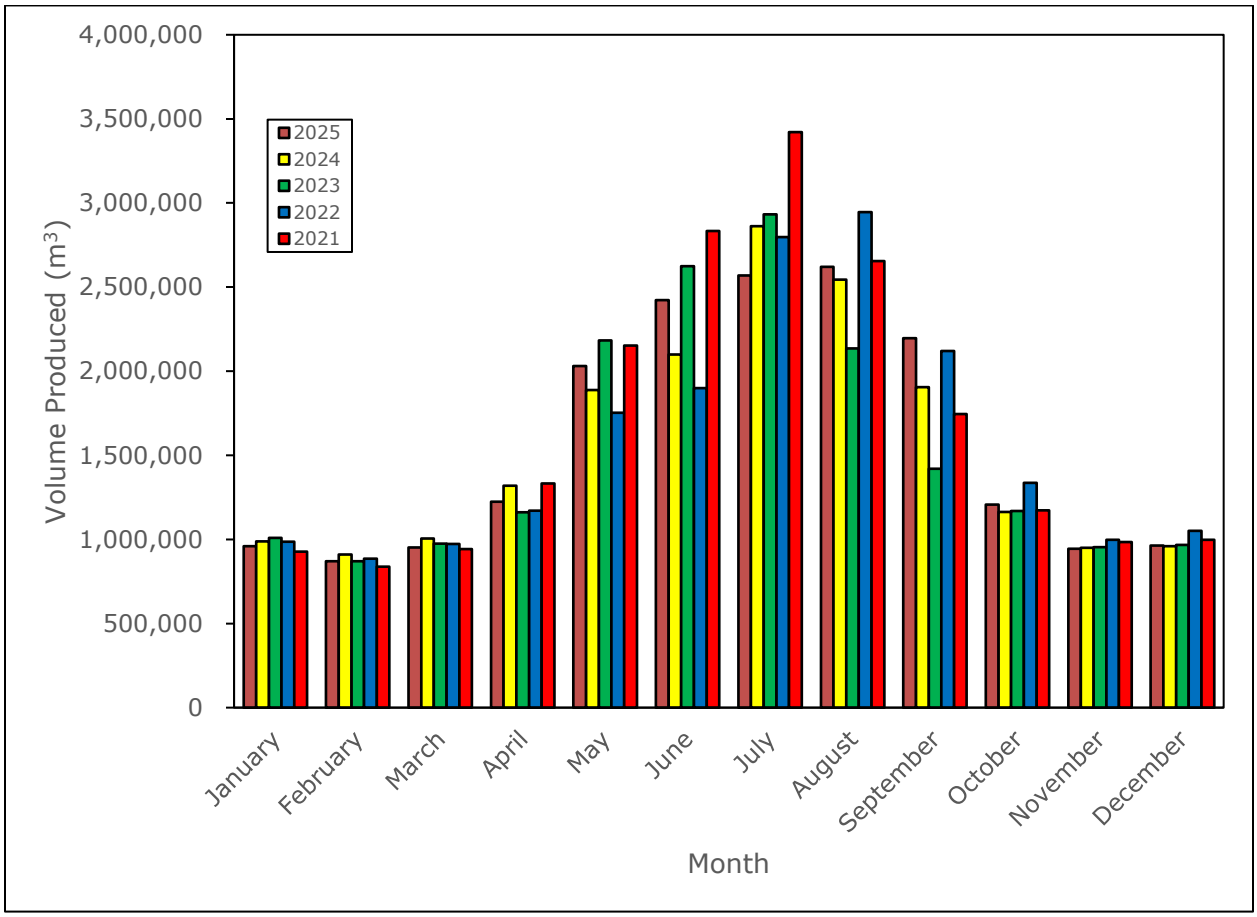
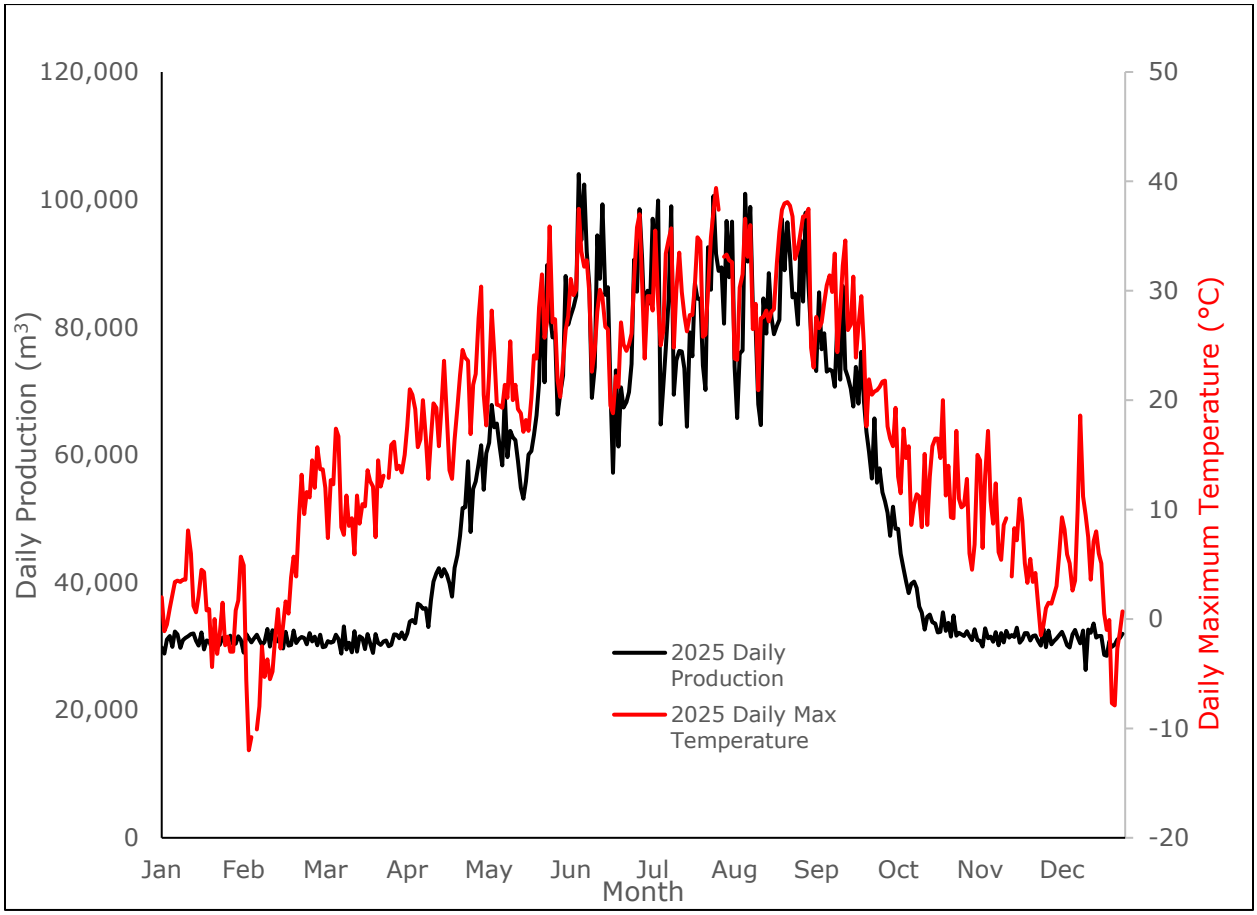


Figure 3 shows the daily water consumption for 2025, overlaid with the year's maximum daily temperatures. The highest daily consumption occurred on June 8, reaching 104,009 m³. A clear correlation can be seen between water production and temperature trends during this period.

Figure 3: KCWQ Daily Water Flows With Daily Average Temperature Overlay for 2025



2.3 Distribution System Overview

The City of Kamloops operates one of Canada's most complex water distribution systems due to the region's unique topography. The distribution system consists of 633 km of water mains, 42 booster stations, 47 reservoirs, 2,458 fire hydrants, and 26,216 connections. The City also maintains a trucked-in water system, which supplies potable water to the Tournament Capital Ranch, a sports recreation area north of the City.

The distribution system features a variety of piping materials (Table 3). The City of Kamloops uses asset management practices to strategically plan and prioritize water infrastructure replacement. Water mains are replaced based on factors such as life expectancy, condition, and risk. Typically, new mains are constructed from PVC. Any increases in non-PVC water main materials (Table 3) result from GIS system updates that correct previously unidentified or misclassified mains rather than the installation of new lines.

Table 3: Water Main Pipe Material Summary

Material	Length (km)	% of Total Pipe	% Change from Last Year
PVC - Polyvinyl Chloride	298.4	47.14%	-0.2%
AC - Asbestos Cement	166.9	26.37%	-1.6%
DI - Ductile Iron	100.6	15.89%	-2.6%
CI - Cast Iron	35	5.53%	-3.4%
HYP - High Pressure Concrete	18.3	2.89%	5.5%
STL - Steel	9.2	1.45%	-17.4%
PLY - Polyethylene	3.5	0.55%	34.3%
CU - Copper	0.8	0.13%	0.0%
GI - Galvanized Iron	0.3	0.05%	0.0%
Total	633.0		

In 2025, the City continued work to improve asset management for the water system. Staff are working to identify future needs based on criticality, life expectancy, condition, and capacity.

3. Water System Highlights in 2025

The following sections will highlight some of the major projects throughout the 2025 operating year and summarize the requests for service received for the water distribution system.

3.1 KCWQ Project Summary for 2025

The following is a list of some of the projects started at the KCWQ in 2025:

- Continued to work with consultant for upgrades to source water intake system
- Membrane aeration hardware replaced
- Cyclic Aeration valves on site for replacement
- Preventative valve replacement project of primary membrane tanks
- Centrifuge replacement ongoing
- Neutralization tank repair ongoing

3.2 Distribution System Project Summary for 2025

- VT Scada Upgrade, ongoing

3.2.1 Booster Stations and Reservoirs

- Completed 2315 Reservoir, cleaning both cells while keeping it online

3.2.2 Distribution System

Major water main replacement projects included:

- Westsyde Rd. (Inskip Rd. to Riverview Rd.), Complete
- McGill Rd. at Hillside Cemetery, Ongoing
- SWS water main and PRV, Complete
- Hillside North - new main and PRV, Ongoing

3.2.3 Requests for Service

In 2025, there were 3,097 requests for service filed with the City's Civic Operations Department related to water distribution and treatment. Table 4 shows a breakdown of the categories to which each request relates.

Table 4: 2025 Service Requests in Water Treatment and Distribution

Request Categories Related to Utilities/ Water	Number of Requests	
	2024	2025
Water - Booster/Pump Stations	6	10
Water - Filling Stations / Cross Connection	45	62
Water - Frozen Services	17	18
Water - General	118	97

Request Categories Related to Utilities/ Water	Number of Requests	
	2024	2025
Water - Hydrants	49	39
Water - Hydrant Check After KFR Use	19	14
Water - Hydrant out of Service	194	212
Water - Irrigation On/Off	23	5
Water - No Water	70	68
Water - Reservoirs	0	1
Water - Service Boxes	71	79
Water - Service Location	70	48
Water - Turn Service On/Off	611	561
Water - Water Leak	240	173
Water Pressure	58	49
Water - Water Quality	56	60
Water - Water Restrictions	44	28
Water - Noble Creek Irrigation System	12	19
Water Meters - General	92	150
Water Meters - Final Read Request	971	1010
Water Meters - Consumption	150	331
Water Meters - Leak Detection	6	12
Water Meters - Leaking Meter Sets	22	28
Water Meters - Meter Change Out	11	23
Totals	2,955	3,097

4. Water Quality Sampling and Analysis

The City's Water Quality Monitoring Program (WQMP) follows the principles outlined in the *Guidelines for Canadian Drinking Water Quality* (GCDWQ) and British Columbia's DWPA and *Drinking Water Protection Regulation* (DWPR). The program monitors both immediate and long-term water quality trends using a multi-barrier approach to ensure safe drinking water.

The City's primary surface water source is the South Thompson River, which supplies all domestic water needs. The North Thompson River serves as an emergency backup.

EOCP-certified staff conduct regular water quality testing at designated sites within the treatment, distribution, and storage system.

City staff are internally reviewing the WQMP.

4.1 Quality Assurance and Quality Control Program

The City's Civic Operations staff are dedicated to ensuring accurate data collection under the WQMP. Staff members receive training in proper sampling methods to ensure reliable results and maintain water quality. All samples are collected and shipped in accordance with the 2005 21st Edition Standard Methods for the Examination of Water and Wastewater.

The WQMP includes quality control inspections and equipment calibration to maintain accuracy. Field instruments used to test the distribution system water (chlorine residual, turbidity, and pH) are cleaned and calibrated on a weekly or monthly schedule. Additionally, online chlorine analyzers at KCWQ are checked nightly.

4.2 KCWQ Water Quality Testing

KCWQ monitors water quality by measuring various parameters throughout the treatment process. Tables 5, 6, and 7 summarize the results of the nightly testing conducted in-house by certified operators.

4.2.1 True and Apparent Colour

Water can appear colored due to two main factors: dissolved substances and suspended particles. Suspended particles, such as clay, silt, algae, or other undissolved materials, contribute to water's apparent colour. Dissolved substances, including organic compounds like tannins from plants, trees, or roots, as well as dissolved metals like iron, can give water a yellowish or brownish hue.

Filtration effectively removes suspended particles, making them easier to treat, while dissolved substances are more challenging to eliminate. Apparent colour refers to the total colour in water, including both dissolved and suspended materials, whereas true colour accounts only for dissolved substances. Although colour does not pose a health risk, it is an aesthetic concern, as discoloured water is unappealing for consumption. The GCDWQ provide an aesthetic objective of ≤15 TCU (total colour units).

4.2.2 pH

pH measures the concentration of hydrogen ions in water, indicating its acidity or basicity. The pH scale ranges from 0 to 14, where values below 7 are acidic, values above 7 are basic, and a pH of 7 is neutral. According to the GCDWQ, drinking water should have a pH between 7.0 and 10.5. KCWQ aims for a slightly higher pH within this range to help prevent pipe corrosion in the distribution system.

4.2.3 Hardness

Water hardness is determined by the concentration of dissolved calcium and magnesium. While these minerals are essential for human health, high levels can cause soap scum buildup, leading to increased soap or detergent use and potential clogging in pipes and hot water tanks.

Water hardness is classified as follows:

- 0–60 mg/L as $CaCO_3$ - Soft
- 61–120 mg/L - Moderate
- 121–180 mg/L - Hard
- Above 180 mg/L - Very Hard

4.2.4 Alkalinity

Alkalinity measures water's buffering capacity, meaning its ability to resist changes in pH when acids or bases are introduced. Higher alkalinity helps maintain a stable pH. While alkalinity has no direct health effects, it serves as an important monitoring tool in water treatment processes.

4.2.5 Conductivity and Total Dissolved Solids

Conductivity and total dissolved solids (TDS) are closely related, as the same probe used to measure conductivity provides an estimate of TDS. Conductivity indicates how well water can conduct electricity, which depends on the concentration of dissolved solids. Since pure water is an insulator, increased conductivity signals a higher presence of dissolved minerals and impurities. In water treatment, conductivity is monitored to detect changes in water quality.

4.2.6 Total Suspended Solids

Total suspended solids (TSS) measures the colloidal material present in water. TSS levels in the source water provide insight into the total solids that must be removed during treatment. Higher TSS indicates murkier or "dirtier" water. There is no specific guideline limit for TSS under the GCDWQ.

4.2.7 Turbidity

Turbidity measures water clarity and is directly influenced by the presence of colloidal particles. It is determined by passing a beam of light through a sample and measuring how much light is scattered at a 90° angle. The measurement is expressed in nephelometric turbidity units (NTU).

According to the GCDWQ, drinking water should have a turbidity of less than 1 NTU in the distribution system. The KCWQ membrane water treatment plant ensures that treated water leaving the facility does not exceed 0.1 NTU.

4.2.8 Aluminum

The KCWQ uses an aluminum-based coagulant in its treatment process. Aluminum levels are monitored in both source and treated water to ensure proper dosing and to prevent excessive aluminum from entering the drinking water. The GCDWQ set a maximum acceptable concentration (MAC) of 2.9 mg/L on a locational running annual average and an operational guideline of 0.1 mg/L on a locational running annual average for water treatment plants.

4.2.9 Free and Total Chlorine (Cl_2)

Maintaining proper chlorine levels is essential for ensuring water safety throughout the distribution system. The primary disinfectant used at KCWQ is sodium hypochlorite.

- Free chlorine measures the amount of active hypochlorite available in the water.
- Total chlorine includes both free chlorine and any combined chlorine disinfectants, such as chloramines.

KCWQ aims to maintain a residual-free chlorine level of at least 0.2 mg/L at the end of the distribution system. There is no specific GCDWQ guideline limit for free or total chlorine.

Table 5: 2025 Monthly Averages for Source Water Analysis

Month	True Colour (Pt Co Units)	Apparent Colour (Pt Co Units)	pH	Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as CaCO3)	TDS (mg/L)	Conductivity (µS/cm)	TSS (mg/L)	Turbidity (NTU)	Aluminum (mg/L)	Temperature (°C)
January	<5	12	7.9	40	40	41.2	66.9	2.9	2.0	0.011	4.2
February	<5	10	7.9	41	40	43.6	74.6	2.2	1.6	0.012	2.4
March	<5	13	7.9	42	40	43.2	72.7	4.2	2.4	0.015	6.0
April	<5	19	7.9	42	41	43.7	75.4	5.8	3.3	0.017	9.1
May	5	17	7.9	41	40	41.0	74.3	4.9	2.7	0.016	12.5
June	<5	14	7.9	39	39	38.3	71.5	3.9	2.3	0.017	15.1
July	<5	12	8.0	37	37	38.0	73.6	3.7	2.3	0.018	20.0
August	<5	11	8.0	37	37	38.6	76.4	2.4	1.8	0.016	22.5
September	<5	11	8.0	38	38	39.1	75.8	2.2	1.9	0.017	21.1
October	<5	12	7.9	39	39	40.5	70.8	2.2	1.9	0.016	13.1
November	<5	11	7.9	40	39	40.8	67.1	1.6	1.6	0.017	8.6
December	<5	12	7.9	40	39	39.4	63.8	3.0	2.1	0.018	5.5
Daily Min.	***<5***	***<5***	***7.7***	***35***	***36***	***33.7***	***48.2***	***0.3***	***0.2***	***<0.008***	***1.4***
Daily Max.	***12***	***36***	***8.1***	***43***	***43***	***59.3***	***93.3***	***17.8***	***9.8***	***0.080***	***23.8***
Annual Avg.	***<5***	***13***	***7.9***	***40***	***39***	***40.6***	***71.9***	***3.2***	***2.2***	***0.016***	***11.8***

In instances where data fell below the limits of analytical detection, half the detection limit was utilized for calculation purposes.

Table 6: 2025 Monthly Averages for Treated Water Analysis

Month	True Colour (Pt Co Units)	Apparent Colour (Pt Co Units)	pH	Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as CaCO3)	TDS (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Aluminum (mg/L)	Temperature (°C)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
January	<5	<5	7.9	40	40	47.8	77.5	0.021	0.011	5.9	1.37	1.46
February	<5	<5	7.9	41	41	50.0	85.2	0.022	0.010	4.5	1.38	1.47
March	<5	<5	8.0	42	41	50.1	85.9	0.026	0.011	7.8	1.36	1.46
April	<5	<5	8.0	42	42	51.3	89.7	0.029	0.014	11.0	1.38	1.50
May	<5	<5	8.0	41	40	48.2	87.8	0.028	0.015	13.9	1.39	1.49
June	<5	<5	8.0	39	39	45.3	84.6	0.032	0.015	16.2	1.39	1.49
July	<5	<5	8.1	37	38	45.5	89.2	0.035	0.017	20.8	1.38	1.48
August	<5	<5	8.1	37	37	46.4	93.1	0.028	0.017	23.1	1.34	1.45
September	<5	<5	8.1	38	38	47.4	93.1	0.025	0.017	21.6	1.34	1.44
October	<5	<5	8.0	40	40	48.6	85.9	0.023	0.015	14.0	1.33	1.43
November	<5	<5	8.0	40	40	49.4	80.9	0.027	0.015	10.0	1.37	1.51
December	<5	<5	8.0	40	40	47.3	76.5	0.027	0.016	7.0	1.36	1.48
Daily Min.	***<5***	***<5***	***7.8***	***35***	***36***	***41.8***	***61.8***	***0.020***	***<0.008***	***3.5***	***1.25***	***1.33***
Daily Max.	***<5***	***<5***	***8.3***	***43***	***43***	***78.7***	***100.4***	***0.039***	***0.031***	***24.4***	***1.57***	***1.70***
Annual Avg.	***<5***	***<5***	***8.0***	***40***	***40***	***48.1***	***85.8***	***0.027***	***0.015***	***13.0***	***1.36***	***1.47***
Guidelines for Canadian Drinking Water Quality	Aesthetic Objective: ≤ 15 mg/L	Aesthetic Objective: ≤ 15 mg/L	6.5 - 8.5	No guideline for drinking water	No guideline for drinking water	Aesthetic Objective : ≤500 mg/L	No guideline for drinking water	Operational Guideline: ≤0.1 NTU	Operational Guideline: <0.1 mg/L	Aesthetic Objective: ≤ 15 °C	No guideline for drinking water	No guideline for drinking water

In instances where data fell below the limits of analytical detection, half the detection limit was utilized for calculation purposes.

Table 7: 2025 Monthly Averages for Distribution System Water Analysis

Distribution System Water Analysis												
	Reservoir	**True Colour (Pt Co Units)**	**Apparent Colour (Pt Co Units)**	**pH**	**Hardness (mg/L as $CaCO_3$)**	**Alkalinity (mg/L as CaCO3)**	**TDS (mg/L)**	**Conductivity (µS/cm)**	**Turbidity (NTU)**	**Field Temp (°C)**	**Free Cl_2 (mg/L)**	**Total Cl_2 (mg/L)**
January	Knutsford	<5	<5	8.1	40	40	48.8	81.2	0.165	9.0	0.74	0.81
	CREDS	<5	<5	7.8	40	40	49.3	89.2	0.195	11.3	0.73	0.79
	Juniper #3	<5	<5	7.9	40	40	49.5	88.8	0.208	7.9	0.79	0.87
	418 Booster	<5	<5	7.9	40	41	50.5	91.2	0.185	5.9	1.09	1.18
	Noble Creek	<5	<5	8.2	40	41	51.5	90.0	0.192	10.5	1.15	1.23
	Memorial	<5	<5	8.0	39	40	48.7	83.4	0.296	4.7	1.16	1.24
	Booster #4 SW	<5	<5	8.0	39	39	48.9	83.2	0.190	5.5	1.08	1.15
February	Knutsford	<5	<5	8.0	41	41	51.7	89.6	0.310	8.6	0.87	0.92
	CREDS	<5	<5	7.8	40	40	49.4	86.2	0.210	7.3	0.47	0.53
	Juniper #3	<5	<5	7.8	40	40	51.3	95.2	0.278	5.6	0.76	0.82
	418 Booster	<5	<5	8.0	40	40	51.8	94.8	0.188	4.1	1.04	1.10
	Noble Creek	<5	<5	8.0	40	41	51.5	94.1	0.267	7.4	1.07	1.14
	Memorial	<5	<5	7.9	41	41	51.5	93.7	0.223	3.3	1.03	1.09
	Booster #4 SW	<5	<5	7.9	42	41	52.1	91.5	0.228	3.2	1.04	1.11
March	Knutsford	<5	<5	8.0	41	40	52.0	92.6	0.202	6.9	0.85	0.91
	CREDS	<5	<5	7.9	42	41	53.3	92.6	0.178	7.6	0.48	0.53
	Juniper #3	<5	<5	8.0	42	41	51.8	94.2	0.150	5.7	0.88	0.96
	418 Booster	<5	<5	8.0	42	42	52.2	90.5	0.160	5.2	1.12	1.20
	Noble Creek	<5	<5	8.0	42	41	51.8	86.5	0.202	7.6	0.83	0.92
	Memorial	<5	<5	7.9	42	40	51.4	91.8	0.215	5.2	0.97	1.01
	Booster #4 SW	<5	<5	7.9	42	41	51.6	96.5	0.245	5.4	0.88	0.95
April	Knutsford	<5	<5	8.0	43	43	51.1	97.6	0.228	9.5	0.88	0.95
	CREDS	<5	<5	7.9	42	42	52.4	94.3	0.155	8.2	0.52	0.59
	Juniper #3	<5	<5	7.9	42	42	52.8	97.6	0.163	8.4	0.75	0.83
	418 Booster	<5	<5	8.0	42	42	52.4	91.3	0.208	8.5	1.02	1.09
	Noble Creek	<5	<5	8.1	42	42	54.3	98.3	0.188	-	0.99	1.08
	Memorial	<5	<5	7.9	43	42	52.4	97.1	0.175	9.6	1.01	1.07
	Booster #4 SW	<5	<5	7.9	43	43	52.5	96.9	0.178	8.7	0.86	0.93
May	Knutsford	<5	<5	8.1	42	41	50.2	91.7	0.150	12.2	0.79	0.86
	CREDS	<5	<5	7.9	42	42	49.6	92.9	0.128	12.2	0.39	0.44
	Juniper #3	<5	<5	8.0	41	41	48.9	91.2	0.140	11.8	0.84	0.90
	418 Booster	<5	<5	8.0	41	41	49.7	92.7	0.328	11.9	1.11	1.17
	Noble Creek	<5	<5	8.0	42	41	50.7	90.5	0.223	13.1	0.84	0.91
	Memorial	<5	<5	8.0	41	41	48.9	86.2	0.282	13.5	1.03	1.08
	Booster #4 SW	<5	<5	8.0	40	40	48.9	89.0	0.108	12.6	0.97	1.04
June	Knutsford	<5	<5	8.0	39	39	46.7	87.8	0.188	12.1	0.68	0.75
	CREDS	<5	<5	7.9	39	39	45.3	78.7	0.184	14.3	0.43	0.50
	Juniper #3	<5	<5	8.0	39	39	45.5	81.7	0.198	15.6	0.96	1.01
	418 Booster	<5	<5	8.0	39	39	46.4	86.6	0.193	14.5	1.23	1.36
	Noble Creek	<5	<5	8.1	40	39	47.4	84.8	0.150	16.0	0.86	0.94
	Memorial	<5	<5	8.0	39	39	44.8	81.9	0.175	15.3	0.98	1.05
	Booster #4 SW	<5	<5	8.0	38	39	45.1	84.8	0.169	13.3	0.96	1.03
July	Knutsford	<5	<5	8.1	38	38	44.4	74.7	0.128	15.4	0.66	0.71
	CREDS	<5	<5	7.8	38	38	44.8	79.1	0.255	16.3	0.18	0.24
	Juniper #3	<5	<5	8.0	38	38	44.6	80.1	0.123	19.5	1.04	1.09
	418 Booster	<5	<5	8.1	38	38	45.7	85.4	0.184	19.1	1.16	1.24
	Noble Creek	<5	<5	8.1	38	38	46.1	86.8	0.158	18.7	0.52	0.58
	Memorial	<5	<5	8.0	37	37	44.7	82.7	0.242	20.7	1.10	1.20
	Booster #4 SW	<5	<5	8.0	37	37	44.5	77.5	0.178	20.1	0.90	0.96
August	Knutsford	<5	<5	8.1	38	38	45.8	84.2	0.120	17.5	0.55	0.61
	CREDS	<5	<5	7.9	38	38	45.4	86.4	0.158	17.8	0.18	0.23
	Juniper #3	<5	<5	8.0	37	38	46.1	89.9	0.128	23.0	1.03	1.06
	418 Booster	<5	<5	8.2	37	37	45.0	80.0	0.173	22.3	1.16	1.24
	Noble Creek	<5	<5	8.2	38	38	46.0	81.6	0.145	21.8	0.50	0.58
	Memorial	<5	<5	8.0	37	38	45.0	79.3	0.155	22.4	1.01	1.09
	Booster #4 SW	<5	<5	8.0	37	38	45.5	84.1	0.130	22.2	0.86	0.90
September	Knutsford	<5	<5	8.1	38	39	46.3	81.4	0.130	17.8	0.49	0.55
	CREDS	<5	<5	7.9	37	37	47.0	75.8	0.170	18.4	0.19	0.25
	Juniper #3	<5	<5	8.1	38	38	45.4	77.4	0.212	20.7	0.78	0.84
	418 Booster	<5	<5	8.1	38	38	46.4	83.7	0.106	21.1	1.16	1.24
	Noble Creek	<5	<5	8.2	38	38	47.7	89.8	0.143	22.1	0.43	0.50
	Memorial	<5	<5	8.1	38	38	46.3	84.2	0.178	21.9	0.97	1.05
	Booster #4 SW	<5	<5	8.1	38	38	46.1	85.1	0.158	21.7	0.85	0.91
October	Knutsford	<5	<5	8.0	39	40	48.5	85.5	0.313	16.3	0.64	0.70
	CREDS	<5	<5	8.0	40	39	48.5	88.3	0.220	15.9	0.21	0.27
	Juniper #3	<5	<5	7.9	40	40	49.8	91.4	0.205	16.0	0.69	0.77
	418 Booster	<5	<5	8.0	40	40	49.6	85.4	0.135	15.2	0.97	1.01
	Noble Creek	<5	<5	8.2	40	39	49.3	79.1	0.184	14.9	0.20	0.26
	Memorial	<5	<5	8.0	40	40	48.0	77.9	0.264	15.9	0.94	1.02
	Booster #4 SW	<5	<5	8.0	40	40	47.9	79.8	0.120	12.4	0.81	0.89
November	Knutsford	<5	<5	8.1	41	40	52.3	88.1	0.210	12.5	0.58	0.65
	CREDS	<5	<5	7.9	40	40	50.1	81.6	0.206	13.6	0.18	0.24
	Juniper #3	<5	<5	8.0	40	40	48.5	80.6	0.125	12.9	0.80	0.87
	418 Booster	<5	<5	8.0	40	40	49.2	81.6	0.113	12.0	1.02	1.09
	Noble Creek	<5	<5	8.2	40	40	54.2	95.8	0.793	15.3	0.36	0.42
	Memorial	<5	5.875	7.9	40	40	49.6	87.0	0.470	15.2	0.97	1.03
	Booster #4 SW	<5	<5	8.0	40	40	49.4	84.9	0.143	10.2	0.95	1.03
December	Knutsford	<5	<5	8.1	40	40	49.4	75.7	0.183	10.8	0.94	0.99
	CREDS	<5	<5	7.9	40	40	48.5	82.9	0.110	10.7	0.19	0.24
	Juniper #3	<5	<5	8.0	40	40	49.2	87.1	0.168	9.6	0.82	0.89
	418 Booster	<5	<5	8.0	40	40	50.0	89.4	0.144	8.8	1.15	1.23
	Noble Creek	<5	<5	8.3	41	41	52.3	89.1	0.154	15.3	0.65	0.73
	Memorial	<5	<5	8.1	40	40	46.9	78.4	0.270	7.3	1.09	1.16
	Booster #4 SW	<5	<5	8.0	40	40	47.3	79.9	0.190	8.5	0.96	1.02
	Daily Min.	***<5***	***<5***	***7.7***	***35***	***36***	***41.9***	***65.7***	***0.015***	***1.7***	***<0.02***	***0.05***
	Daily Max.	***<5***	***16***	***8.4***	***43***	***43***	***59.6***	***103.1***	***2.770***	***24.1***	***1.52***	***1.57***
	Annual Avg.	***<5***	***<5***	***8.0***	***40***	***40***	***48.8***	***86.7***	***0.195***	***12.7***	***0.81***	***0.88***
Guidelines for Canadian Drinking Water Quality Objectives		Aesthetic Objective: ≤ 15 mg/L	Aesthetic Objective: ≤15 mg/L	6.5 - 8.5	No guideline for drinking water	No guideline for drinking water	Aesthetic Objective: ≤500 mg/L	No guideline for drinking water	Operational Guideline: ≤1.0 NTU	Aesthetic Objective: ≤ 15 °C	No guideline for drinking water	No guideline for drinking water

In instances where data fell below the limits of analytical detection, half the detection limit was utilized for calculation purposes.

In 2025, there were two incidents where turbidity was > 1.0 NTU in the distribution system. Resampling for the samples taken at Noble Creek Booster on November 12 and at the Memorial Booster on November 27 was not available, but the testing before and after these dates indicates sampling error was the cause of the elevated levels.

4.3 Distribution System Bacteriological Monitoring

The City is committed to providing safe and reliable drinking water to its customers. In compliance with the DWPA and the DWPR, water suppliers must have bacteriological testing performed by a certified laboratory approved by the Provincial Health Officer.

To meet this requirement, the City contracts a certified third-party laboratory to analyze weekly bacteriological samples. At least 23 distinct locations within the distribution system are tested each week for background bacterial counts, total coliforms, and E. coli.

4.3.1 Background Bacterial Monitoring

Monitoring background bacteria provides insight into the overall "health" of the distribution system. Testing helps identify conditions that may allow bacteria to regrow or thrive within the system. The GCDWQ does not set a maximum acceptable concentration (MAC) for background colonies. If any sample tests positive for background bacteria, it is immediately resampled. If bacterial counts exceed 200, the system is flushed and resampled to ensure water quality remains safe.

4.3.2 Total Coliform Bacterial Monitoring

Coliform bacteria are a broad group of bacteria found in water, soil, vegetation, and the feces of mammals. While most coliforms are not harmful to humans, their presence serves as a useful indicator of contamination due to the ease of testing.

In the water distribution system, the GCDWQ states that the acceptable threshold for coliform bacteria is zero. If a sample tests positive for coliforms, the site is immediately resampled. If coliforms are detected again, a boil water advisory is issued, and the affected area is taken offline, cleaned, and resampled before being returned to service.

4.3.3 *E. coli* Bacterial Monitoring

Escherichia coli (*E. coli*) is a subset of coliform bacteria found almost exclusively in the feces of mammals. Its presence in the distribution system is a definitive sign of contamination. While most strains of *E. coli* are harmless, some can cause serious illness or even death in certain cases.

Any positive *E. coli* result triggers immediate resampling and may lead to system cleaning and boil water advisories to protect public health.

4.3.4 Bacteriological Monitoring Results

In 2025, bacteriological testing was performed 1,274 times over 24 locations in the distribution system. There were two positive tests for total coliforms and no positive tests for *E. coli* in the system. The positive coliform tests were resampled immediately and came back with no coliforms present. Several samples tested positive for background colonies throughout the system during the year, but they were clear upon resampling. Resampling occurs at the discretion of the distribution system chief operator and when background counts are greater than 200. The 2025 results indicate that the City's drinking water is safe for public consumption.

4.4 2025 Source Water and Distribution System Water Quality Analysis

The following extensive water quality analysis results were completed by a provincially accredited lab on the source water and the water within the distribution system (Memorial Booster) on May 27, 2025. The sampling events were completed in compliance with the KCWQ operational certificate. The samples were taken by City staff and sent to CARO Analytical Services (CARO) in Kelowna, BC. The results of these analyses are shown in Tables 8 through 15.

Table 8: CARO General Parameters Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Hardness, Dissolved (as CaCO3)	mg/L	0.5	N/A	41.4	44
Hardness, Total (as CaCO3)	mg/L	0.5	None Required	41.4	41.4
Colour, True	CU	5	AO≤15	<5.0	<5.0
Alkalinity, Total (as CaCO3)	mg/L	1	N/A	38.7	37.4
Alkalinity, Phenolphthalein (as CaCO3)	mg/L	1	N/A	<1.0	<1.0
Alkalinity, Bicarbonate (as CaCO3)	mg/L	1	N/A	38.7	37.4
Alkalinity, Carbonate (as CaCO3)	mg/L	1	N/A	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	mg/L	1	N/A	<1.0	<1.0
Ammonia, Total (as N)	mg/L	0.05	None Required	<0.050	0.1
BOD, 5-day	mg/L	2	N/A	<8.0	<8.0
Carbon, Total Organic	mg/L	0.5	N/A	3.02	2.72
Carbon, Dissolved Organic	mg/L	0.5	N/A	2.92	2.64
Cyanide, Total	mg/L	0.002	MAC=0.2	0.0031	0.0083
Nitrogen, Total Kjeldahl	mg/L	0.05	N/A	0.374	0.155
Oil & Grease, Total	mg/L	2	N/A	93.5	<2.0
Solids, Total Dissolved	mg/L	15	AO≤500	59	59
Sulfide, Total	mg/L	0.02	AO≤0.05	<0.020	<0.020
Turbidity	NTU	0.1	OG<1	1.09	0.25
pH	pH units	0.1	7.0-10.5	7.76	7.26
Conductivity (EC)	uS/cm	2	N/A	100	116
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Distribution system water (Memorial Booster) analyses indicated that the GCDWQ were met for general water quality parameters.

Table 9: CARO Anions Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Bromide	mg/L	0.1	N/A	<0.10	<0.10
Chloride	mg/L	0.1	AO≤250	1.37	6.13
Fluoride	mg/L	0.1	MAC=1.5	<0.10	<0.10
Nitrate (as N)	mg/L	0.01	MAC=10	0.041	0.041
Nitrite (as N)	mg/L	0.01	MAC=1	<0.010	<0.010
Sulfate	mg/L	1	AO≤500	6.0	5.9
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Distribution system water (Memorial Booster) analyses indicated that the GCDWQ were met for anions.

Table 10: CARO Total Metals Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Aluminum	mg/L	0.005	OG<0.1	0.0983	0.0158
Antimony	mg/L	0.0002	MAC=0.006	<0.00020	<0.00020
Arsenic	mg/L	0.0005	MAC=0.01	<0.00050	<0.00050
Barium	mg/L	0.005	MAC=2	0.0114	0.0117
Beryllium	mg/L	0.0001	N/A	<0.00010	<0.00010
Bismuth	mg/L	0.0001	N/A	<0.00010	<0.00010
Boron	mg/L	0.05	MAC=5	<0.0500	<0.0500
Cadmium	mg/L	0.00001	MAC=0.007	0.000016	<0.000010
Calcium	mg/L	0.2	None Required	13.3	13.4
Chromium	mg/L	0.0005	MAC=0.05	<0.00050	<0.00050
Cobalt	mg/L	0.0001	N/A	0.00013	<0.00010
Copper	mg/L	0.0004	MAC=2	0.00261	0.00766
Iron	mg/L	0.01	AO<=0.1	0.136	0.036
Lead	mg/L	0.0002	MAC=0.005	<0.00020	0.00066
Lithium	mg/L	0.0001	N/A	0.0007	0.00066
Magnesium	mg/L	0.01	None Required	1.94	1.93

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Manganese	mg/L	0.0002	MAC=0.12	0.0053	0.0163
Mercury	mg/L	0.00001	MAC=0.001	<0.000010	<0.000010
Molybdenum	mg/L	0.0001	N/A	0.00058	0.00059
Nickel	mg/L	0.0004	N/A	0.00105	0.00079
Phosphorus	mg/L	0.05	N/A	<0.050	<0.050
Potassium	mg/L	0.1	N/A	2.08	1.69
Selenium	mg/L	0.0005	MAC=0.05	<0.00050	<0.00050
Silicon	mg/L	1	N/A	3.2	3.1
Silver	mg/L	0.00005	None Required	<0.000050	<0.000050
Sodium	mg/L	0.1	AO<=200	2	5.11
Strontium	mg/L	0.001	MAC=7	0.08	0.082
Sulfur	mg/L	3	N/A	<3.0	<3.0
Tellurium	mg/L	0.0005	N/A	<0.00050	<0.00050
Thallium	mg/L	0.00002	N/A	<0.000020	<0.000020
Thorium	mg/L	0.0001	N/A	<0.00010	<0.00010
Tin	mg/L	0.0002	N/A	<0.00020	<0.00020
Titanium	mg/L	0.005	N/A	0.0053	<0.0050
Tungsten	mg/L	0.001	N/A	<0.0010	<0.0010
Uranium	mg/L	0.00002	MAC=0.02	0.000269	0.000096
Vanadium	mg/L	0.005	N/A	<0.0050	<0.0050
Zinc	mg/L	0.004	AO<=5	0.008	0.0079
Zirconium	mg/L	0.0001	N/A	0.00013	<0.00010
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Distribution system water (Memorial Booster) analyses indicated that the GCDWQ were met for total metals.

Table 11: CARO Dissolved Metals Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Aluminum	mg/L	0.005	N/A	0.0071	0.0087
Antimony	mg/L	0.0002	N/A	<0.00020	<0.00020
Arsenic	mg/L	0.0005	N/A	<0.00050	<0.00050
Barium	mg/L	0.005	N/A	0.0108	0.0105
Beryllium	mg/L	0.0001	N/A	<0.00010	<0.00010
Bismuth	mg/L	0.0001	N/A	<0.00010	<0.00010
Boron	mg/L	0.05	N/A	<0.0500	<0.0500
Cadmium	mg/L	0.00001	N/A	0.000012	<0.000010
Calcium	mg/L	0.2	N/A	13.1	13.9
Chromium	mg/L	0.0005	N/A	<0.00050	<0.00050
Cobalt	mg/L	0.0001	N/A	<0.00010	<0.00010
Copper	mg/L	0.0004	N/A	0.0023	0.00598
Iron	mg/L	0.01	N/A	<0.010	<0.010
Lead	mg/L	0.0002	N/A	<0.00020	<0.00020
Lithium	mg/L	0.0001	N/A	0.00076	0.00079
Magnesium	mg/L	0.01	N/A	2.11	2.27
Manganese	mg/L	0.0002	N/A	0.00162	0.00049
Mercury	mg/L	0.00004	N/A	<0.000010	<0.000010
Molybdenum	mg/L	0.0001	N/A	0.00058	0.00057
Nickel	mg/L	0.0004	N/A	0.00082	0.00057
Phosphorus	mg/L	0.05	N/A	<0.050	<0.050
Potassium	mg/L	0.1	N/A	2.3	1.96
Selenium	mg/L	0.0005	N/A	<0.00050	<0.00050
Silicon	mg/L	1	N/A	3.2	3.4
Silver	mg/L	0.00005	N/A	<0.000050	<0.000050
Sodium	mg/L	0.1	N/A	2.05	5.67
Strontium	mg/L	0.001	N/A	0.0832	0.0847
Sulfur	mg/L	3	N/A	<3.0	<3.0
Tellurium	mg/L	0.0005	N/A	<0.00050	<0.00050
Thallium	mg/L	0.00002	N/A	<0.000020	<0.000020
Thorium	mg/L	0.0001	N/A	<0.00010	<0.00010
Tin	mg/L	0.0002	N/A	<0.00020	<0.00020
Titanium	mg/L	0.005	N/A	<0.0050	<0.0050

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Tungsten	mg/L	0.001	N/A	<0.0010	<0.0010
Uranium	mg/L	0.00002	N/A	0.00028	0.000103
Vanadium	mg/L	0.005	N/A	<0.0050	<0.0050
Zinc	mg/L	0.004	N/A	0.0071	0.0079
Zirconium	mg/L	0.0001	N/A	<0.00010	<0.00010
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Distribution system water (Memorial Booster) analyses indicated that GCDWQ guidelines were met for dissolved metals.

Table 12: CARO Pesticides, Herbicides, and Fungicides Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Glyphosate	mg/L	0.05	MAC=0.28	<0.050	<0.050
Phenolics, Total	mg/L	0.002	N/A	<0.00200	<0.00200
Alachlor	ug/L	0.1	N/A	<0.100	<0.100
Aldrin	ug/L	0.006	N/A	<0.006	<0.006
Atrazine	ug/L	0.1	N/A	<0.100	<0.100
Azinphos-methyl	ug/L	0.2	N/A	<0.200	<0.200
alpha-BHC	ug/L	0.01	N/A	<0.010	<0.010
beta-BHC	ug/L	0.05	N/A	<0.050	<0.050
delta-BHC	ug/L	0.05	N/A	<0.050	<0.050
gamma-BHC (Lindane)	ug/L	0.05	N/A	<0.050	<0.050
Bromacil	ug/L	0.1	N/A	<0.100	<0.100
Captan	ug/L	0.1	N/A	<0.100	<0.100
alpha-Chlordane	ug/L	0.05	N/A	<0.050	<0.050
gamma-Chlordane	ug/L	0.05	N/A	<0.050	<0.050
Chlorothalonil	ug/L	0.05	N/A	<0.050	<0.050
Chlorpyrifos	ug/L	0.01	MAC=90	<0.010	<0.053
Cyanazine	ug/L	0.1	N/A	<0.100	<0.100
p,p-DDD	ug/L	0.01	N/A	<0.010	<0.010
p,p'-DDE	ug/L	0.01	N/A	<0.010	<0.010

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
p,p'-DDT	ug/L	0.01	N/A	<0.010	<0.010
Diazinon	ug/L	0.02	N/A	<0.020	<0.020
Dichlorvos	ug/L	0.1	N/A	<0.100	<0.100
Dieldrin	ug/L	0.01	N/A	<0.010	<0.010
Dimethoate	ug/L	0.2	MAC=20	<0.200	<0.200
Disulfoton	ug/L	0.1	N/A	<0.100	<0.100
Endosulfan I	ug/L	0.01	N/A	<0.010	<0.010
Endosulfan II	ug/L	0.01	N/A	<0.010	<0.010
Endosulfan sulfate	ug/L	0.05	N/A	<0.050	<0.050
Endrin	ug/L	0.02	N/A	<0.020	<0.020
Endrin aldehyde	ug/L	0.02	N/A	<0.020	<0.020
Endrin ketone	ug/L	0.02	N/A	<0.020	<0.020
Fenchlorphos (Ronnel)	ug/L	0.1	N/A	<0.100	<0.100
Heptachlor	ug/L	0.01	N/A	<0.010	<0.010
Heptachlor epoxide	ug/L	0.01	N/A	<0.010	<0.010
Malathion	ug/L	0.1	MAC=290	<0.100	<0.100
Methyl parathion	ug/L	0.1	N/A	<0.100	<0.100
Metolachlor	ug/L	0.1	N/A	<0.100	<0.100
Metribuzin	ug/L	0.2	MAC=80	<0.200	<0.200
Parathion	ug/L	0.1	N/A	<0.100	<0.100
Pentachloronitrobenzene	ug/L	0.1	N/A	<0.100	<0.100
cis-Permethrin	ug/L	0.01	N/A	<0.010	<0.010
trans-Permethrin	ug/L	0.01	N/A	<0.010	<0.010
Phorate	ug/L	0.1	N/A	<0.100	<0.100
Simazine	ug/L	0.2	N/A	<0.200	<0.200
Sulfotep	ug/L	0.1	N/A	<0.100	<0.100
Terbufos	ug/L	0.1	N/A	<0.100	<0.100
Triallate	ug/L	0.1	N/A	<0.100	<0.100
Trifluralin	ug/L	0.2	N/A	<0.200	<0.200
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Distribution system water analyses indicated that the GCDWQ were met for pesticides, herbicides and fungicides.

Table 13: CARO Polycyclic Aromatic Hydrocarbon (PAH) Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Acenaphthene	ug/L	0.05	N/A	<0.050	<0.050
Acenaphthylene	ug/L	0.2	N/A	<0.200	<0.200
Acridine	ug/L	0.05	N/A	<0.050	<0.050
Anthracene	ug/L	0.01	N/A	<0.010	<0.010
Benz(a)anthracene	ug/L	0.01	N/A	<0.010	<0.010
Benzo(a)pyrene	ug/L	0.01	MAC=0.04	<0.010	<0.010
Benzo(b+j)fluoranthene	ug/L	0.05	N/A	<0.050	<0.050
Benzo(g,h,i)perylene	ug/L	0.05	N/A	<0.050	<0.050
Benzo(k)fluoranthene	ug/L	0.05	N/A	<0.050	<0.050
2-Chloronaphthalene	ug/L	0.1	N/A	<0.100	<0.100
Chrysene	ug/L	0.05	N/A	<0.050	<0.050
Dibenz(a,h)anthracene	ug/L	0.01	N/A	<0.010	<0.010
Fluoranthene	ug/L	0.03	N/A	<0.030	<0.030
Fluorene	ug/L	0.05	N/A	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/L	0.05	N/A	<0.050	<0.050
1-Methylnaphthalene	ug/L	0.1	N/A	<0.100	<0.100
2-Methylnaphthalene	ug/L	0.1	N/A	<0.100	<0.100
Naphthalene	ug/L	0.2	N/A	<0.200	<0.200
Phenanthrene	ug/L	0.1	N/A	<0.100	<0.100
Pyrene	ug/L	0.02	N/A	<0.020	<0.020
Quinoline	ug/L	0.05	N/A	<0.050	<0.050
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Distribution system water analyses indicated that the GCDWQ were met for PAH.

Table 14: CARO Volatile Organic Compounds (VOC) Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Bromodichloromethane	mg/L	0.001	N/A	<0.0010	<0.0010
Bromoform	mg/L	0.001	N/A	<0.0010	<0.0010
Chloroform	mg/L	0.001	N/A	<0.0010	0.0134
Dibromochloromethane	mg/L	0.001	N/A	<0.0010	<0.0010
Benzene	ug/L	0.5	MAC=5	<0.5	<0.5
Bromodichloromethane	ug/L	1	N/A	<1.0	<1.0

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Bromoform	ug/L	1	N/A	<1.0	<1.0
Carbon tetrachloride	ug/L	0.5	MAC=2	<0.5	<0.5
Chlorobenzene	ug/L	1	AO<=30	<1.0	<1.0
Chloroethane	ug/L	2	N/A	<2.0	<2.0
Chloroform	ug/L	1	N/A	<1.0	13.4
Dibromochloromethane	ug/L	1	N/A	<1.0	<1.0
1,2-Dibromoethane	ug/L	0.3	N/A	<0.3	<0.3
Dibromomethane	ug/L	1	N/A	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	0.5	N/A	<0.5	<0.5
1,3-Dichlorobenzene	ug/L	1	N/A	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	1	AO<=1	<1.0	<1.0
1,1-Dichloroethane	ug/L	1	N/A	<1.0	<1.0
1,2-Dichloroethane	ug/L	1	MAC=5	<1.0	<1.0
1,1-Dichloroethylene	ug/L	1	N/A	<1.0	<1.0
cis-1,2-Dichloroethylene	ug/L	1	N/A	<1.0	<1.0
trans-1,2-Dichloroethylene	ug/L	1	N/A	<1.0	<1.0
Dichloromethane	ug/L	3	MAC=50	<3.0	<3.0
1,2-Dichloropropane	ug/L	1	N/A	<1.0	<1.0
1,3-Dichloropropene (cis + trans)	ug/L	1	N/A	<1.0	<1.0
Ethylbenzene	ug/L	1	AO<=1.6	<1.0	<1.0
Methyl tert-butyl ether	ug/L	1	AO<=15	<1.0	<1.0
Styrene	ug/L	1	N/A	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	0.5	N/A	<0.5	<0.5
Tetrachloroethylene	ug/L	1	MAC=10	<1.0	<1.0
Toluene	ug/L	1	MAC=60	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	1	N/A	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	1	N/A	<1.0	<1.0
Trichloroethylene	ug/L	1	MAC=5	<1.0	<1.0
Trichlorofluoromethane	ug/L	1	N/A	<1.0	<1.0
Vinyl chloride	ug/L	1	MAC=2	<1.0	<1.0
Xylenes (total)	ug/L	2	AO<=20	<2.0	<2.0
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Chloroform concentrations were detected at the Memorial Booster in 2025. Chloroform has been detected in similar concentrations in City's booster stations at the extremities of the distribution system over the past several years. Chloroform is a disinfection byproduct when hypochlorite, which is used to disinfect water, reacts with organic matter present in the water. Chloroform is not regulated under the GCDWQ.

Table 15: CARO Perfluorinated Compounds Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Source Water	Memorial Booster
				May 27	May 27
Perfluorooctanesulfonate (PFOS)	ug/L	0.2	0.6	<0.200	<0.200
Perfluorooctanoic acid (PFOA)	ug/L	0.2	0.2	<0.200	<0.200
Perfluoropentanoic acid (PFPeA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorobutanesulfonate (PFBS)	ug/L	10	N/A	<10.0	<10.0
Perfluorohexanoic acid (PFHxA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluoroheptanoic acid (PFHpA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorohexanesulfonate (PFHxS)	ug/L	0.2	N/A	<0.200	<0.200
Perfluoroheptane sulfonate (PFHpS)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorononanoic acid (PFNA)	ug/L	0.02	N/A	<0.020	<0.020
Perfluorodecanoic acid (PFDA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluoroundecanoic acid (PFUnA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorodecanesulfonate (PFDS)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorododecanoic acid (PFDoA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorotetradecanoic acid (PFTeA)	ug/L	1	N/A	<1.00	<1.00
Perfluorooctanesulfonamide (PFOSA)	ug/L	1	N/A	<1.00	<1.00
Perfluorotridecanoic acid (PFTrA)	ug/L	1	N/A	<1.00	<1.00
Perfluorobutanoic acid (PFBA)	ug/L	25	N/A	<25.0	<25.0
6:2 Fluorotelomer sulfonate (6:2FTS)	ug/L	0.2	N/A	<0.200	<0.200
8:2 Fluorotelomer sulfonate (8:2FTS)	ug/L	0.2	N/A	<0.200	<0.200
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value					

Distribution system water analyses indicated that the GCDWQ were met for the available perfluorinated compounds.

4.5 Trihalomethanes (THM) and Haloacetic Acid (HAA) Analysis in the Distribution System in 2025

Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are tested in drinking water because they are disinfection byproducts (DBPs) that form when chlorine or other disinfectants react with natural organic matter in the water. While disinfection is crucial for eliminating harmful pathogens, prolonged exposure to high levels of these byproducts can pose long-term health risks.

To assess DBP formation within the distribution system, monitoring sites are strategically chosen to represent locations farthest from KCWQ. This helps determine whether THMs and HAAs develop as water travels through the system. Each year, four locations are tested, with sampling sites and timing rotating annually.

In 2025, THM and HAA samples were collected on April 22 and May 20 and sent to CARO Analytical Services (CARO) in Kelowna, BC, for analysis. The results are presented in Table 16.

Table 16: CARO Trihalomethanes and Haloacetic Acids Analysis

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	Lac LeJeune Booster	Knutsford Booster	Campbell Creek Booster	Noble Creek Booster
				April 22		May 20	
Haloacetic Acids							
Monochloroacetic Acid	mg/L	0.0020	N/A	<0.0020	<0.0020	0.0027	0.0023
Monobromoacetic Acid	mg/L	0.0020	N/A	<0.0020	<0.0020	<0.0020	<0.0020
Dichloroacetic Acid	mg/L	0.0020	N/A	0.0189	0.0204	0.0151	0.0227
Trichloroacetic Acid	mg/L	0.0020	N/A	0.0231	0.0241	0.0187	0.0297
Dibromoacetic Acid	mg/L	0.0020	N/A	<0.0020	<0.0020	<0.0020	<0.0020
Total Haloacetic Acids	mg/L	0.0020	MAC: 0.08	0.0420	0.0445	0.0366	0.0547
Trihalomethanes							
Bromodichloromethane	mg/L	0.0010	N/A	0.0017	0.0015	0.001	0.0016
Bromoform	mg/L	0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Chloroform	mg/L	0.0010	N/A	0.0496	0.0415	0.0390	0.0572
Dibromochloromethane	mg/L	0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Total Trihalomethanes	mg/L	0.0040	MAC: 0.1	0.0513	0.0431	0.0400	0.0588
MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guidance Value							

Distribution system water analysis indicated that City water met the GCDWQ for THM and HAA.

5. Small Water Systems

The City owns and operates two small water systems in areas that the distribution system does not reach. One of those systems is at the Tournament Capital Ranch in Rayleigh, and the other is a reverse osmosis system (RO) for the Kamloops Sewage Treatment Centre (KSTC) administration building.

5.1 Tournament Capital Ranch Water System

The City trucks treated and chlorinated drinking water to the Tournament Capital Ranch potable water system, and the water is stored in a 38 m³ cistern. The cistern supplies the washroom/concession building and the outdoor fountains/taps with potable water. Operation and monitoring of this site occur only in the summer months when the site is open to the public. Chlorine residual and microbial water sampling occurred weekly, and there were no positive results for any bacteriological species in 2025.

5.2 Kamloops Sewage Treatment Center Water System

Since the City's municipal water system does not reach KSTC, a local water supply and treatment system was installed to provide potable water solely to the KSTC administration building.

Interior Health completed an inspection of the KSTC water system on May 7, 2025. The following testing parameters were recommended in the inspection:

- As per the Drinking Water Protection Act (Schedule B) the operator is to collect minimum four bacteriological samples per month. Sampling was initiated in July 2025.
- Semi-annual comprehensive testing of treated water for at minimum: iron, arsenic, fluoride, turbidity, sulfate, TDS, sodium, aluminum, lead and manganese to confirm that treatment system is functioning as per the design.

5.2.1 In-House Testing

Water use at the KSTC was measured at 226 m³ from January to December 2025. The usage rate of 0.62 m³ per day is lower than the design level of 1.35 m³ per day. The results of the 2025 in-house testing are shown in Table 17.

Table 17: 2025 In-House Testing of RO Treated Water at KSTC

	Temperature (°C)	pH	Conductivity (µS/cm)
Average RO Treated Water Quality (55 samples in 2025)	21.0	9.1	132

The 2025 in-house testing indicated that the RO system is functioning well.

5.2.2 External Testing

Starting in July 2025, weekly bacteriological testing began with samples sent to Caro Analytical in Kelowna for analysis.

In 2025, bacteriological testing was performed 27 times on RO treated water at KSTC. There was one positive test for total coliforms and no positive tests for *E. coli* in the system. A resample of the positive coliform test indicated no coliforms were present. A total of 12 samples tested positive for background colonies throughout the system during the year, but they were clear upon resampling. The 2025 results indicate that the KSTC RO System provides safe drinking water for consumption.

In 2025, samples of RO treated water were taken on June 25 and October 8 and sent to Caro Analytical for a full analysis. The results are shown in Tables 18 through 26.

Table 18: 2025 KSTC Water Quality Analysis - General Parameters

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				Jun 25	Oct 8
Hardness, Dissolved (as CaCO3)	mg/L	0.5	N/A	8.06	7.99
Hardness, Total (as CaCO3)	mg/L	0.5	None Required	8.33	8.64
Nitrogen, Total Kjeldahl	mg/L	0.05	N/A	<0.050	<0.050
Nitrate+Nitrite (as N)	mg/L	0.01	N/A	0.0127	<0.0100
Nitrogen, Total	mg/L	0.05	N/A	<0.0500	<0.0500
Colour, True	CU	5	AO<=15	<5.0	<5.0
Alkalinity, Total (as CaCO3)	mg/L	1	N/A	42.2	59.3
Alkalinity, Phenolphthalein (as CaCO3)	mg/L	1	N/A	4	<1.0
Alkalinity, Bicarbonate (as CaCO3)	mg/L	1	N/A	34.1	59.3
Alkalinity, Carbonate (as CaCO3)	mg/L	1	N/A	8.1	<1.0
Alkalinity, Hydroxide (as CaCO3)	mg/L	1	N/A	<1.0	<1.0
Ammonia, Total (as N)	mg/L	0.05	None Required	<0.050	<0.050
Carbon, Dissolved Organic	mg/L	0.5	N/A	<0.50	<0.50
Oil & Grease, Total	mg/L	2	N/A	<2.0	<2.0
Phosphorus, Total (as P)	mg/L	0.005	N/A	0.035	0.0259
Phosphorus, Dissolved Reactive	mg/L	0.005	N/A	0.0267	0.0212
Solids, Total Dissolved	mg/L	15	AO<=500	73	99
Solids, Total Suspended	mg/L	2	N/A	<2.0	1.8
Sulfide, Total	mg/L	0.02	AO<=0.05	<0.020	<0.020
Turbidity	NTU	0.1	OG<1	0.15	0.24
pH	pH units	0.1	7.0-10.5	8.61	7.93
Conductivity (EC)	uS/cm	2	N/A	128	144
EPHw10-19	ug/L	250	N/A	277	<250
EPHw19-32	ug/L	250	N/A	<250	<250
MAC = Maximum Acceptable Concentration AO = Aesthetic objective OG = Operational Guidance Value					

The RO treated water at the KSTC met drinking water quality guidelines for general parameters.

Table 19: 2025 KSTC Water Quality Analysis – Anions

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				Jun 25	Oct 8
Chloride	mg/L	0.1	AO≤250	12.6	12.8
Fluoride	mg/L	0.1	MAC=1.5	0.11	0.16
Nitrate (as N)	mg/L	0.01	MAC=10	0.013	<0.010
Nitrite (as N)	mg/L	0.01	MAC=1	<0.010	<0.010
Sulfate	mg/L	1	AO≤500	2.6	4.7
MAC = Maximum Acceptable Concentration AO = Aesthetic objective OG = Operational guidance value					

The RO treated water at the KSTC met drinking water quality guidelines for anions.

Table 20: 2025 KSTC Water Quality Analysis - Total Metals

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				Jun 25	Oct 8
Aluminum, total	mg/L	0.005	OG<0.1	<0.0050	0.0073
Antimony, total	mg/L	0.0002	MAC=0.006	<0.00020	<0.00020
Arsenic, total	mg/L	0.0005	MAC=0.01	0.00253	0.00341
Barium, total	mg/L	0.005	MAC=2	<0.0050	<0.0050
Beryllium, total	mg/L	0.0001	N/A	<0.00010	<0.00010
Bismuth, total	mg/L	0.0001	N/A	<0.00010	<0.00010
Boron, total	mg/L	0.05	MAC=5	0.891	0.993
Cadmium, total	mg/L	0.00001	MAC=0.007	<0.000010	<0.000010
Calcium, total	mg/L	0.2	None Required	3.21	3.33
Chromium, total	mg/L	0.0005	MAC=0.05	<0.00050	<0.00050
Cobalt, total	mg/L	0.0001	N/A	<0.00010	<0.00010
Copper, total	mg/L	0.0004	MAC=2	0.00916	0.0182
Iron, total	mg/L	0.01	AO<=0.1	<0.010	<0.010
Lead, total	mg/L	0.0002	MAC=0.005	<0.00020	0.00021
Lithium, total	mg/L	0.0001	N/A	0.00094	0.00113
Magnesium, total	mg/L	0.01	None Required	0.073	0.078
Manganese, total	mg/L	0.0002	MAC=0.12	0.00082	0.00117
Mercury, total	mg/L	0.00001	MAC=0.001	<0.000010	<0.000010
Molybdenum, total	mg/L	0.0001	N/A	0.0083	0.00995
Nickel, total	mg/L	0.0004	N/A	<0.00040	0.00076
Phosphorus, total	mg/L	0.05	N/A	<0.050	<0.050
Potassium, total	mg/L	0.1	N/A	<0.10	<0.10
Selenium, total	mg/L	0.0005	MAC=0.05	<0.00050	<0.00050
Silicon, total	mg/L	1	N/A	3	3.5
Silver, total	mg/L	0.00005	None Required	<0.000050	<0.000050
Sodium, total	mg/L	0.1	AO<=200	24.6	29.1
Strontium, total	mg/L	0.001	MAC=7	0.0099	0.0106
Sulfur, total	mg/L	3	N/A	<3.0	<3.0
Tellurium, total	mg/L	0.0005	N/A	<0.00050	<0.00050
Thallium, total	mg/L	0.00002	N/A	<0.000020	<0.000020
Thorium, total	mg/L	0.0001	N/A	<0.00010	<0.00010
Tin, total	mg/L	0.0002	N/A	<0.00020	<0.00020
Titanium, total	mg/L	0.005	N/A	<0.0050	<0.0050
Tungsten, total	mg/L	0.001	N/A	<0.0010	<0.0010
Uranium, total	mg/L	0.00002	MAC=0.02	<0.000020	<0.000020
Vanadium, total	mg/L	0.005	N/A	<0.0050	<0.0050
Zinc, total	mg/L	0.004	AO<=5	<0.0040	<0.0040
Zirconium, total	mg/L	0.0001	N/A	<0.00010	<0.00010

MAC = Maximum Acceptable Concentration AO = Aesthetic objective OG = Operational Guidance Value

The RO treated water at the KSTC met drinking water quality guidelines for total metals.

Table 21: 2025 KSTC Water Quality Analysis - Dissolved Metals

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				Jun 25	Oct 8
Aluminum, dissolved	mg/L	0.005	N/A	<0.0050	<0.0050
Antimony, dissolved	mg/L	0.0002	N/A	<0.00020	<0.00020
Arsenic, dissolved	mg/L	0.0005	N/A	0.00246	0.00325
Barium, dissolved	mg/L	0.005	N/A	<0.0050	<0.0050
Beryllium, dissolved	mg/L	0.0001	N/A	<0.00010	<0.00010
Bismuth, dissolved	mg/L	0.0001	N/A	<0.00010	<0.00010
Boron, dissolved	mg/L	0.05	N/A	0.899	0.941
Cadmium, dissolved	mg/L	0.00001	N/A	<0.000010	<0.000010
Calcium, dissolved	mg/L	0.2	N/A	3.09	3.08
Chromium, dissolved	mg/L	0.0005	N/A	<0.00050	<0.00050
Cobalt, dissolved	mg/L	0.0001	N/A	<0.00010	<0.00010
Copper, dissolved	mg/L	0.0004	N/A	0.00755	0.00921
Iron, dissolved	mg/L	0.01	N/A	<0.010	<0.010
Lead, dissolved	mg/L	0.0002	N/A	<0.00020	<0.00020
Lithium, dissolved	mg/L	0.0001	N/A	0.00094	0.00105
Magnesium, dissolved	mg/L	0.01	N/A	0.079	0.071
Manganese, dissolved	mg/L	0.0002	N/A	0.00062	0.00063
Mercury, dissolved	mg/L	0.00001	N/A	<0.000010	<0.000010
Molybdenum, dissolved	mg/L	0.0001	N/A	0.00772	0.00948
Nickel, dissolved	mg/L	0.0004	N/A	<0.00040	<0.00040
Phosphorus, dissolved	mg/L	0.05	N/A	<0.050	<0.050
Potassium, dissolved	mg/L	0.1	N/A	<0.10	<0.10
Selenium, dissolved	mg/L	0.0005	N/A	<0.00050	<0.00050
Silicon, dissolved	mg/L	1	N/A	3	3.3
Silver, dissolved	mg/L	0.00005	N/A	<0.000050	<0.000050
Sodium, dissolved	mg/L	0.1	N/A	26.3	29.5
Strontium, dissolved	mg/L	0.001	N/A	0.0097	0.0103
Sulfur, dissolved	mg/L	3	N/A	<3.0	<3.0
Tellurium, dissolved	mg/L	0.0005	N/A	<0.00050	<0.00050
Thallium, dissolved	mg/L	0.00002	N/A	<0.000020	<0.000020
Thorium, dissolved	mg/L	0.0001	N/A	<0.00010	<0.00010
Tin, dissolved	mg/L	0.0002	N/A	<0.00020	<0.00020
Titanium, dissolved	mg/L	0.005	N/A	<0.0050	<0.0050
Tungsten, dissolved	mg/L	0.001	N/A	<0.0010	<0.0010
Uranium, dissolved	mg/L	0.00002	N/A	<0.000020	<0.000020
Vanadium, dissolved	mg/L	0.005	N/A	<0.0050	<0.0050
Zinc, dissolved	mg/L	0.004	N/A	<0.0040	<0.0040
Zirconium, dissolved	mg/L	0.0001	N/A	<0.00010	<0.00010
MAC = Maximum Acceptable Concentration AO = Aesthetic objective					

The RO treated water at the KSTC met drinking water quality guidelines for dissolved metals.

Table 22: 2025 KSTC Water Quality Analysis - Pesticides, Herbicides and Fungicides

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				Jun 25	Oct 8
Glyphosate	mg/L	0.05	MAC=0.28	<0.050	<0.050
Alachlor	ug/L	0.1	N/A	<0.100	<0.100
Aldrin	ug/L	0.006	N/A	<0.006	<0.006
Atrazine and metabolites	ug/L	0.1	MAC=5	<0.100	<0.100
Azinphos-methyl	ug/L	0.2	N/A	<0.200	<0.200
alpha-BHC	ug/L	0.01	N/A	<0.010	<0.010
beta-BHC	ug/L	0.05	N/A	<0.050	<0.050
delta-BHC	ug/L	0.05	N/A	<0.050	<0.050
gamma-BHC (Lindane)	ug/L	0.05	N/A	<0.050	<0.050
Bromacil	ug/L	0.1	N/A	<0.100	<0.100
Bromoxynil	ug/L	0.2	MAC=30	<0.200	<0.200
Butachlor	ug/L	0.02	N/A	<0.020	<0.020
Captan	ug/L	0.1	N/A	<0.100	<0.100
Chlordane (cis + trans)	ug/L	0.05	N/A	<0.050	<0.050
Chlorothalonil	ug/L	0.05	N/A	<0.050	<0.050
Chlorpyrifos	ug/L	0.01	MAC=90	<0.010	<0.010
Cyanazine	ug/L	0.1	N/A	<0.100	<0.100
DDT, Total	ug/L	0.01	N/A	<0.010	<0.010
Deltamethrin	ug/L	0.1	N/A	<0.100	<0.100
Diazinon	ug/L	0.02	N/A	<0.020	<0.020
Dichlorvos	ug/L	0.1	N/A	<0.100	<0.100
Diclofop-methyl	ug/L	0.1	N/A	<0.100	<0.100
Dieldrin	ug/L	0.01	N/A	<0.010	<0.010
Dimethoate	ug/L	0.2	MAC=20	<0.200	<0.200
Disulfoton	ug/L	0.1	N/A	<0.100	<0.100
Diuron	ug/L	0.2	MAC=150	<0.200	<0.200
Endosulfan I + II	ug/L	0.01	N/A	<0.010	<0.010
Endosulfan sulfate	ug/L	0.05	N/A	<0.050	<0.050
Endrin	ug/L	0.02	N/A	<0.020	<0.020
Endrin aldehyde	ug/L	0.07	N/A	<0.070	<0.020
Endrin ketone	ug/L	0.02	N/A	<0.020	<0.020
Fenchlorphos (Ronnel)	ug/L	0.1	N/A	<0.100	<0.100
Heptachlor	ug/L	0.01	N/A	<0.010	<0.010
Heptachlor epoxide	ug/L	0.01	N/A	<0.010	<0.010
Linuron	ug/L	0.05	N/A	<0.050	<0.050
Malathion	ug/L	0.1	MAC=290	<0.100	<0.100
Methoxychlor	ug/L	0.05	N/A	<0.050	<0.050
Methyl parathion	ug/L	0.1	N/A	<0.100	<0.100
Metolachlor	ug/L	0.1	N/A	<0.100	<0.100
Metribuzin	ug/L	0.2	MAC=80	<0.200	<0.200
Parathion	ug/L	0.1	N/A	<0.100	<0.100
Pentachloronitrobenzene	ug/L	0.1	N/A	<0.100	<0.100
Permethrin	ug/L	0.01	N/A	<0.010	<0.010
Phorate	ug/L	0.1	N/A	<0.100	<0.100
Prometon	ug/L	0.3	N/A	<0.300	<0.300
Prometryne	ug/L	0.1	N/A	<0.100	<0.100
Simazine	ug/L	0.2	N/A	<0.200	<0.200
Sulfotep	ug/L	0.1	N/A	<0.100	<0.100
Tebuthiuron	ug/L	0.2	N/A	<0.200	<0.200
Temephos (Abate)	ug/L	0.5	N/A	<0.500	<0.500
Terbufos	ug/L	0.1	N/A	<0.100	<0.100
Triallate	ug/L	0.1	N/A	<0.100	<0.100
Trifluralin	ug/L	0.2	N/A	<0.200	<0.200

MAC = Maximum Acceptable Concentration AO = Aesthetic objective OG = Operational Guidance Value

The RO treated water at the KSTC met drinking water quality guidelines for all pesticides, herbicides and fungicides in the analysis suite.

Table 23: 2025 KSTC Water Quality Analysis - Polycyclic Aromatic Hydrocarbons (PAH)

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				Jun 25	Oct 8
Acenaphthene	ug/L	0.05	N/A	<0.050	<0.050
Acenaphthylene	ug/L	0.2	N/A	<0.200	<0.200
Acridine	ug/L	0.05	N/A	<0.050	<0.050
Anthracene	ug/L	0.01	N/A	<0.010	<0.010
Benz(a)anthracene	ug/L	0.01	N/A	<0.010	<0.010
Benzo(a)pyrene	ug/L	0.01	MAC=0.04	<0.010	<0.010
Benzo(b+j)fluoranthene	ug/L	0.05	N/A	<0.050	<0.050
Benzo(g,h,i)perylene	ug/L	0.05	N/A	<0.050	<0.050
Benzo(k)fluoranthene	ug/L	0.05	N/A	<0.050	<0.050
2-Chloronaphthalene	ug/L	0.1	N/A	<0.100	<0.100
Chrysene	ug/L	0.05	N/A	<0.050	<0.050
Dibenz(a,h)anthracene	ug/L	0.01	N/A	<0.010	<0.010
Fluoranthene	ug/L	0.03	N/A	<0.030	<0.030
Fluorene	ug/L	0.05	N/A	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/L	0.05	N/A	<0.050	<0.050
1-Methylnaphthalene	ug/L	0.1	N/A	<0.100	<0.100
2-Methylnaphthalene	ug/L	0.1	N/A	<0.100	<0.100
Naphthalene	ug/L	0.2	N/A	<0.200	<0.200
Phenanthrene	ug/L	0.1	N/A	<0.100	<0.100
Pyrene	ug/L	0.02	N/A	<0.020	<0.020
Quinoline	ug/L	0.05	N/A	<0.050	<0.050

MAC = Maximum Acceptable Concentration AO = Aesthetic objective OG = Operational Guidance Value

The RO treated water at the KSTC met drinking water quality guidelines for PAH compounds.

Table 24: 2025 KSTC Water Quality Analysis - Volatile Organic Compounds (VOC)

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				25-Jun	08-Oct
Benzene	ug/L	0.5	MAC=5	<0.5	<0.5
Bromodichloromethane	ug/L	1	N/A	<1.0	<1.0
Bromoform	ug/L	1	N/A	<1.0	<1.0
Carbon tetrachloride	ug/L	0.5	MAC=2	<0.5	<0.5
Chlorobenzene	ug/L	1	AO<=30	<1.0	<1.0
Chloroethane	ug/L	2	N/A	<2.0	<2.0
Chloroform	ug/L	1	N/A	<1.0	<1.0
Dibromochloromethane	ug/L	1	N/A	<1.0	<1.0
1,2-Dibromoethane	ug/L	0.3	N/A	<0.3	<0.3
Dibromomethane	ug/L	1	N/A	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	0.5	N/A	<0.5	<0.5
1,3-Dichlorobenzene	ug/L	1	N/A	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	1	AO<=1	<1.0	<1.0
1,1-Dichloroethane	ug/L	1	N/A	<1.0	<1.0
1,2-Dichloroethane	ug/L	1	MAC=5	<1.0	<1.0
1,1-Dichloroethylene	ug/L	1	N/A	<1.0	<1.0
cis-1,2-Dichloroethylene	ug/L	1	N/A	<1.0	<1.0
trans-1,2-Dichloroethylene	ug/L	1	N/A	<1.0	<1.0
Dichloromethane	ug/L	3	MAC=50	<3.0	<3.0
1,2-Dichloropropane	ug/L	1	N/A	<1.0	<1.0
,3-Dichloropropene (cis + trans	ug/L	1	N/A	<1.0	<1.0
Ethylbenzene	ug/L	1	AO<=1.6	<1.0	<1.0
Methyl tert-butyl ether	ug/L	1	AO<=15	<1.0	<1.0
Styrene	ug/L	1	N/A	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	0.5	N/A	<0.5	<0.5
Tetrachloroethylene	ug/L	1	MAC=10	<1.0	<1.0
Toluene	ug/L	1	MAC=60	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	1	N/A	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	1	N/A	<1.0	<1.0
Trichloroethylene	ug/L	1	MAC=5	<1.0	<1.0
Trichlorofluoromethane	ug/L	1	N/A	<1.0	<1.0
Vinyl chloride	ug/L	1	MAC=2	<1.0	<1.0
Xylenes (total)	ug/L	2	AO<=20	<2.0	<2.0
MAC = Maximum Acceptable Concentration			AO = Aesthetic objective	OG = Operational Guidance Value	

The RO treated water at the KSTC met drinking water quality guidelines for VOC compounds.

Table 25: 2025 KSTC Water Quality Analysis - Perfluorinated Compounds

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water	
				Jun 25	Oct 8
Perfluorooctanesulfonate (PFOS)	ug/L	0.2	0.6	<0.200	<0.200
Perfluorooctanoic acid (PFOA)	ug/L	0.2	0.2	<0.200	<0.200
Perfluoropentanoic acid (PFPeA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorobutanesulfonate (PFBS)	ug/L	10	N/A	<10.0	<10.0
Perfluorohexanoic acid (PFHxA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluoroheptanoic acid (PFHpA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorohexanesulfonate (PFHxS)	ug/L	0.2	N/A	<0.200	<0.200
Perfluoroheptane sulfonate (PFHpS)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorononanoic acid (PFNA)	ug/L	0.02	N/A	<0.020	<0.020
Perfluorodecanoic acid (PFDA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluoroundecanoic acid (PFUnA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorodecanesulfonate (PFDS)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorododecanoic acid (PFDoA)	ug/L	0.2	N/A	<0.200	<0.200
Perfluorotetradecanoic acid (PFTeA)	ug/L	1	N/A	<1.00	<1.00
Perfluorooctanesulfonamide (PFOSA)	ug/L	1	N/A	<1.00	<1.00
Perfluorotridecanoic acid (PFTrA)	ug/L	1	N/A	<1.00	<1.00
Perfluorobutanoic acid (PFBA)	ug/L	25	N/A	<25.0	<25.0
6:2 Fluorotelomer sulfonate (6:2FTS)	ug/L	0.2	N/A	<0.200	<0.200
8:2 Fluorotelomer sulfonate (8:2FTS)	ug/L	0.2	N/A	<0.200	<0.200
MAC = Maximum Acceptable Concentration AO = Aesthetic objective OG = Operational Guidance Value					

The RO treated water at the KSTC met drinking water quality guidelines for available perfluorinated compounds.

Table 26: 2025 KSTC Water Quality Analysis - Radiological

Analyte	Units	Method Detection Limit	Guidelines for Canadian Drinking Water Quality	RO Treated Water		
				Mar 18	Jun 25	Oct 8
Gross Alpha Activity	Bq/L	0.03	MAC=0.5	<0.04	<0.03	<0.05
Gross Beta Activity	Bq/L	0.02	MAC=1	<0.02	<0.02	<0.02
MAC = Maximum Acceptable Concentration AO = Aesthetic objective OG = Operational guidance value						

The RO treated water at the KSTC met drinking water quality guidelines for screening of radiological species. These results indicate that no further radiological testing is required.

6. Related City of Kamloops Water Programs

6.1 Source Water Assessment and Protection Plan

In 2014, the City, in collaboration with the Fraser Basin Council, completed a Source Water Protection Plan (SWPP). The plan followed the Ministry of Health's Drinking Water Source-to-Tap Assessment Guideline and consisted of four key modules:

- Source Delineation and Characterization
- Hazard Source Inventory
- Risk Assessment
- Actions to Improve Drinking Water Protection

The SWPP outlined several recommendations to mitigate risks, with the primary one being the construction of the North Thompson Emergency Water Intake to address potential source contamination. This emergency intake was successfully completed in 2019. Additionally, the plan provided recommendations for communication strategies and emergency response measures.

Another key recommendation was the formation of a Technical Advisory Group to monitor water quality and regulatory changes. Established in 2023, this group consists of members from utility operations, utility treatment, and engineering. They are responsible for evaluating updates to Health Canada guidelines, assessing risks in the watershed, and integrating new parameters into the WQMP as needed.

In 2024, the City launched a Watershed Climate Change Adaptation Study to examine the impacts of drought and geological changes on the water supply. The study also explores alternative water sources in response to drought and geomorphological shifts. Funded by the Community Emergency Preparedness Fund and the Disaster Resilience and Innovation Fund, specialists are spending the following two years analyzing watershed changes, including erosion effects on Kamloops Lake and drought risks to the City's two water sources.

6.2 Cross-Connection Program

The City of Kamloops has enacted the standalone *Cross Connection Control Bylaw No. 12-71*, replacing section 30 of *Waterworks Bylaw No. 12-31*. This updated bylaw is crafted to align with the Municipal Ticket Information Bylaw, allowing for the imposition of fines in cases of non-compliance. Oversight and enforcement of the Cross Connection Control Bylaw are jointly managed by the City of Kamloops Utilities Operations and Community Services.

The Cross Connection Control Bylaw serves the crucial purpose of establishing a robust framework for the organization and utility to meet Interior Health's requirements for operating a water system under the *Drinking Water Protection Act*. Its core objective is to protect public health by preventing the contamination of the City's pristine drinking water supply through backflow incidents. The formulation of this bylaw and its accompanying procedures is informed by industry best practices and closely reflects similar frameworks adopted by municipalities across British Columbia.

This proactive measure underscores our unwavering dedication to ensuring the uninterrupted provision of high-quality drinking water to our residents, all while upholding regulatory standards and safeguarding public health.

In 2025, the City completed Cross Connection Control Surveys for all municipal facilities and is currently developing cost estimates for identified and recommended system upgrades. The City also completed its first year of implementation of specialized Cross Connection Control software, through which approximately 1,622 accounts were established, and 1,251 test reports were submitted.

6.3 Emergency Response Plan Update

Safe and reliable drinking water is a top priority for the City's Utilities Services Division. Emergency response planning is one of several important steps in preparing our staff for the different scenarios that may arise. Like other water systems of this size, the City's public water system can have emergencies such as pipe breaks, pump malfunctions, bacteriological contamination, and power outages. The purpose of the City's Main Water System Emergency Response Plan, which was created in 2013, is to implement a plan to make these situations more manageable. The City completed a draft update of the Response Plan in 2025, and the document is currently being reviewed internally. It will be presented to Interior Health in 2027.