City of West Kelowna

2025 ANNUAL WATER REPORT

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WEST KELOWNA

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1 INTRODUCTION

Acknowledgement

The City of West Kelowna rests on the traditional territory of the syilx / Okanagan people who have resided here since time immemorial. We recognize, honour, and respect the syilx / Okanagan lands upon which we live, work, and play, and the lands which provide us the water we use to supply our communities. Westbank First Nation independently governs Tsinstikeptum I.R. 9 and I.R. 10 which are close neighbours of the City of West Kelowna. The two communities are indelibly integrated.

Background

The annual report is an important part of providing West Kelowna residents with information regarding the quality and the risks associated with the drinking water supply system. It also provides users with educational information, details about ongoing challenges, and planned improvements to the water supply system. The water systems are governed by the *British Columbia Drinking Water Protection Act* which sets out requirements for drinking water operators and suppliers to ensure the provision of safe drinking water to their customers. West Kelowna has a plan to guide future improvements to the water system and continuing to provide residents with safe drinking water.

Drinking water can be a complex issue and much of the information provided in the report is technical in nature. Please contact the City of West Kelowna's Engineering Services department should you have any questions.

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2 DRINKING WATER SYSTEM DESCRIPTION

Figure 1: Horseshoe Lake, a controlled reservoir in the PCWSA

Source Water

The City of West Kelowna primarily makes use of source water from the Powers Creek and Lambly Creek watersheds. Flow from both the Powers Creek watershed and Lambly Creek watershed are controlled through a series of reservoirs and dams to ensure a consistent and steady supply year-round. The Powers Creek watershed ultimately converges into Powers Creek which supplies the Powers Creek Water Treatment Plant, and the Lambly Creek watershed converges to Rose Valley Reservoir where it then services the Rose Valley Water Treatment Plant.

Powers Creek Source Water Quality

The Powers Creek watershed encompasses ~136 km2 with an elevation range from 340 m at Okanagan Lake to 1,860 m at the summit of Whiterocks Mountain. The Powers Creek Community Watershed source area is ~131 km2 and includes the portion of the watershed upstream of the old Westbank System intake. The Alocin Creek Community Watershed source area is ~5 km2 and is situated within the Nicola River watershed (for the purpose of this report it is considered part of the Powers Creek Community watershed).

Figure 2: Powers Creek Watershed (PCWSA)

Lambly Creek and Rose Valley Source Water Quality

Lambly Creek and Rose Valley are designated Community Watersheds and provide drinking water to the Rose Valley Water Service Area. The Lambly Creek watershed area, upstream of the intake, is ~232 km2 and is located on the western shore of Okanagan Lake. Elevations range from 342 m at the mouth of the creek to Okanagan Lake to over 1,900 m at the summit of Terrace Mountain.

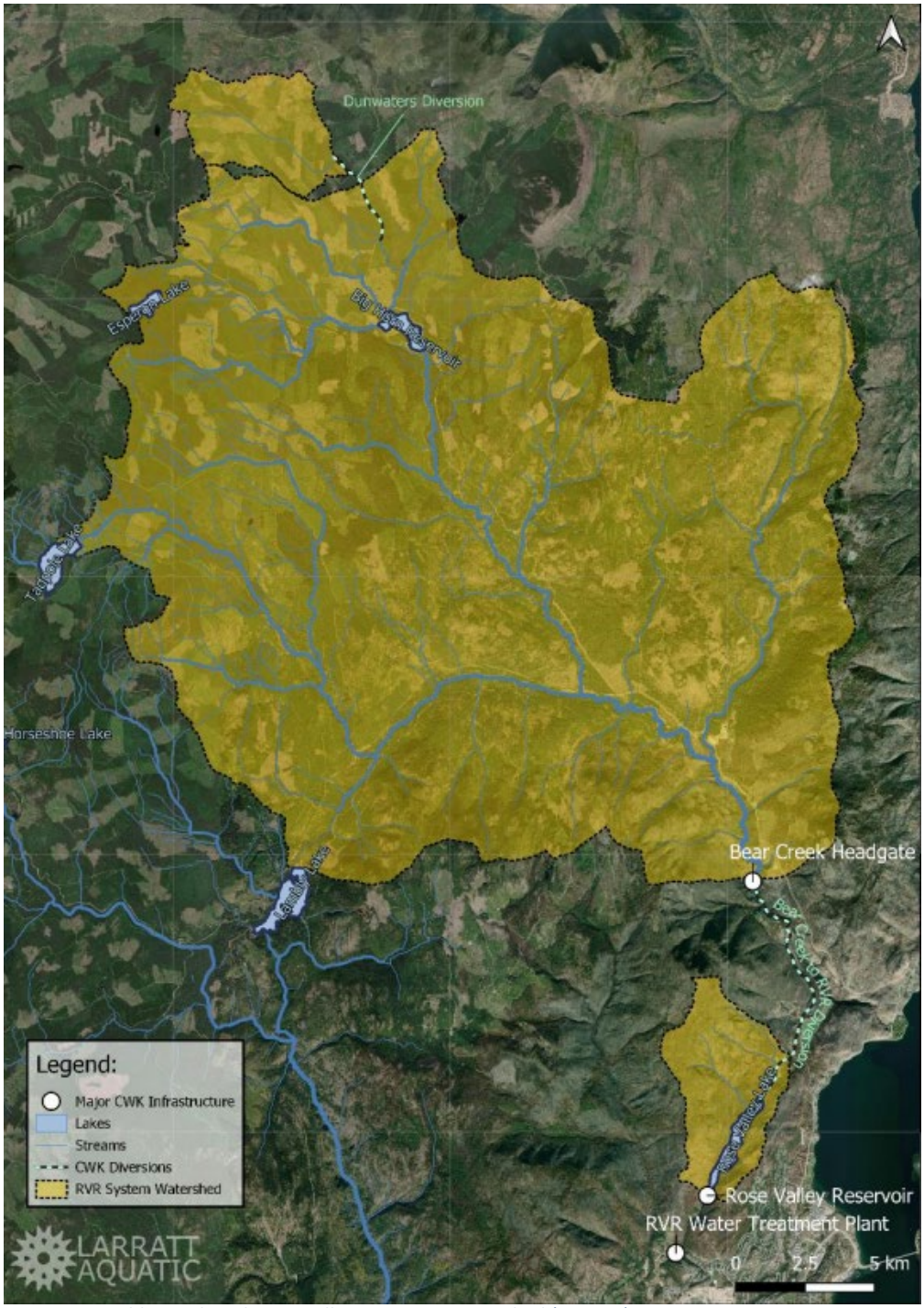

Figure 3: Lambly Creek and Rose Valley Reservoir Watershed (RVWSA)

Treatment System

For the supply of water to the domestic customers, the City has developed a plan to meet provincial "Drinking Water Treatment Objectives (Microbiological) for Surface Water Supplies in British Columbia" that is supported by Interior Health. As outlined in the West Kelowna Water Utility Master Plan, which is receiving an update for 2025, the City started operating the new water treatment plant from the Rose Valley source in November 2023 that supplies water to the former West Kelowna Estates, Lakeview, Sunnyside and Pritchard Utilities, collectively renamed the Rose Valley Water Service Area. The City received grant funding from the Government of British Columbia's Clean Water and Wastewater Fund of $41,002,000 for the construction of the facility.

Source water for the City of West Kelowna is treated at two water treatment plants (WTPs): Powers Creek WTP and the above-mentioned Rose Valley WTP. The Powers Creek WTP, commissioned in 2007, provides service to over 4,700 customers. The Rose Valley WTP provides water to the Rose Valley water system, which combines the legacy Lakeview Irrigation, Sunnyside/Pritchard, and West Kelowna Estates water systems. It provides service to approximately 7,800 customers.

Drinking water treatment objectives for surface water supplies are outlined by B.C.'s Drinking Water Officers' Guide. This guide, last updated in 2024, outlines the following objectives:

- Two treatment processes for surface water.
- Less than or equal to (≤) one nephelometric turbidity unit (NTU) of turbidity.
- No detectable E. Coli, fecal coliform and total coliform.

Both the Powers Creek and Rose Valley WTPs use Dissolved Air Filtration (DAF), granular media filtration, and disinfection with both UV radiation and chlorine dosing. Physical removal of viruses is achieved through filtration, which is then followed by disinfection which renders viruses inactive. Together these measures work to achieve the treatment objectives outlined above. The City of West Kelowna publishes monthly water quality reports from both water treatment plants which exhibit the fulfillment of these objectives. These reports are available under the Water Data section of our website.

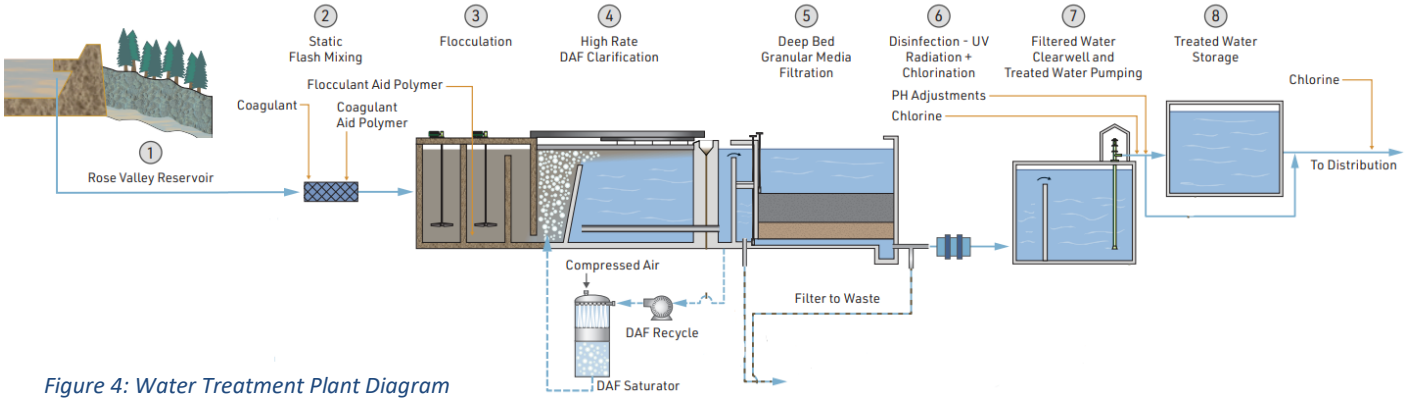

Figure 4: Water Treatment Plant Diagram

Distribution System

The City of West Kelowna distributes an average of 26 Megaliters (MLs) of water per day (up to 40ML during peak demand) over 300km of water main and other components including 16 reservoirs, 78 Pressure-reducing valves, and 18 pump/booster stations before diverging into a large network of smaller water lines used to service each customer. A wide array of components and a variety of pipe materials are in use within the distribution network, each of which has an expected service life. The expected service life for the various components of the water distribution network informs planning and budgetary considerations for necessary upgrades and replacements.

Capital Projects

Capital projects completed or in progress in 2025 which support the maintenance of these components are listed below:

- Cathodic Protection Systems
- Intrusion alarms, fencing, and changes in lockup for pump stations and reservoir infrastructure
- Advancement of SCADA Backbone, Radio Communications and PLC Update Project
- Water age management through temperature profiles and installation of mixers to key reservoir locations to promote turnover
- Water meter replacement program
- Backflow prevention
- Installation of five new sample stations
- Purchase of emergency backup generators for pump stations

Figure 5: Crews working on the Menu Road Upgrades

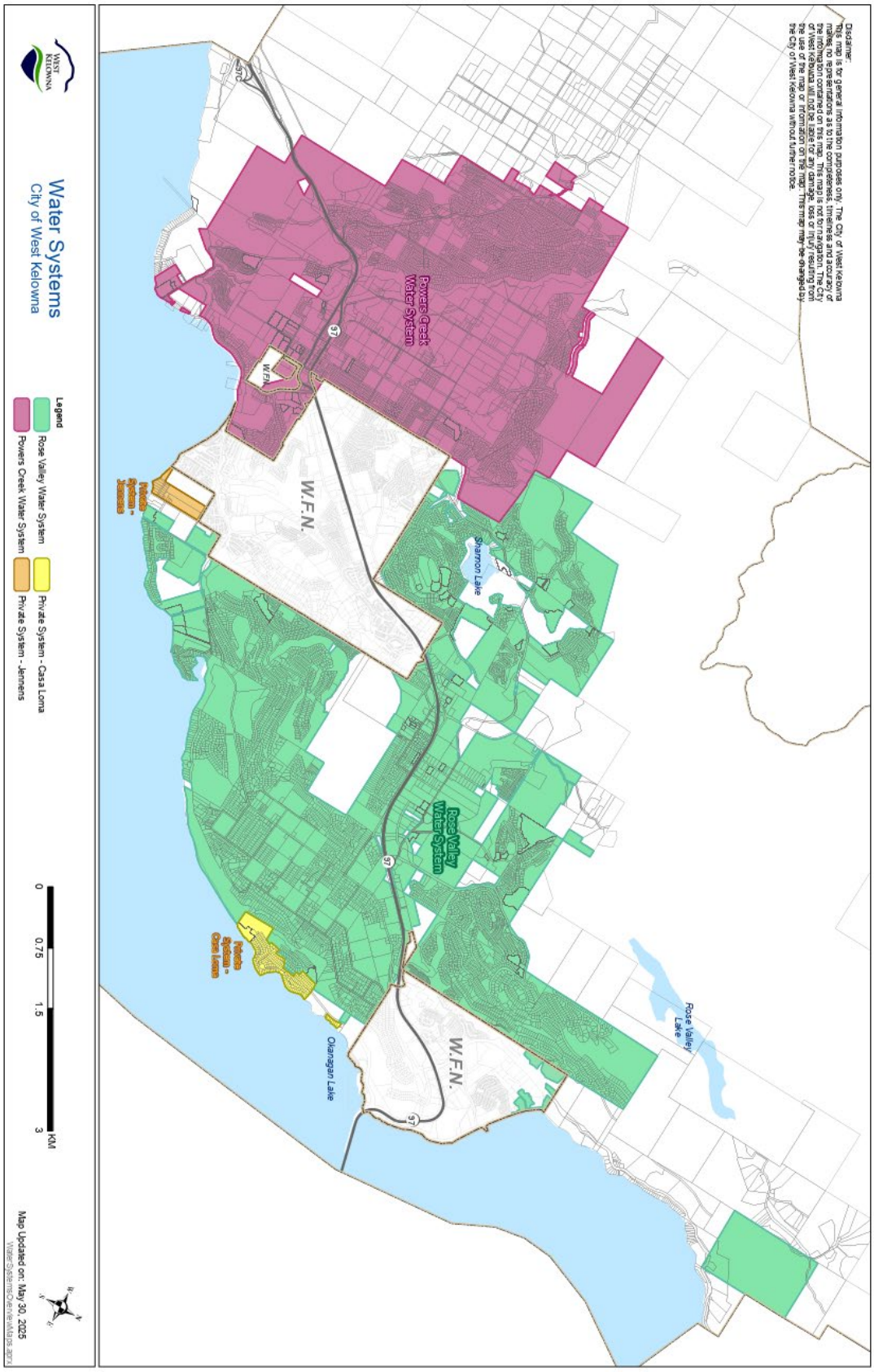

Figure 6: Map of Water Systems in City of West Kelowna

3 WATER QUALITY SAMPLING PROGRAM AND RESULTS

Water Quality Regulations and Treated Water Goals

Water suppliers are responsible for delivering safe drinking water as outlined in the Health Canada Guidelines for Canadian Drinking Water Quality, and Schedule A of the Drinking Water Protection Regulation of BC. These guidelines provide parameters which outline acceptable limits for a wide range of possible water contaminants. Detailed results of water testing and quality are published monthly by the city and can be found under the Water Data section of our website. A summary of these results for the Rose Valley and Powers Creek water treatment plants is included in Appendix B.

These treatment objectives provide a minimum performance target for the production of microbiologically safe drinking water. Depending on specifics to the source water, the actual amount of treatment required will depend on the risks identified; and greater levels of treatment may be required. Water treatment is only one part of the multi-barrier approach to providing safe drinking water. Protecting the source water and reducing distribution system risks can be essential complementary steps to providing treatment when dealing with microbiological risks.

Figure 7: Rose Valley Water Treatment Plant

Guidelines for Canadian Drinking Water Quality

The Guidelines for Canadian Drinking Water Quality lists adhering to its microbiological parameters (Included in Table 3.1 below) as the highest priority for safe drinking water as microorganisms such as disease-causing bacteria, protozoa, and viruses pose the most significant risk to people's health. Test results from the Powers Creek and Rose Valley water treatment plants for 2025 fall within all microbiological parameter guidelines for E.coli and Total Coliforms.

Microbiological Parameters		
Parameter	**Guideline**	**Health Consideration**
Escherichia coli (E. coli)	None detectable per 100mL	Indicator of fecal contamination. Pathogens in human and animal feces pose the greatest immediate danger to public health.
Total coliforms	None detectable per 100mL	Not used as indicator of health effects; tool to determine how well the water treatment system is operating.
Turbidity	1.0 NTU (Nephalometric Turbidity Units)	The presence of particles (turbidity) can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.

Table 3.1: Microbiological Parameters according to the Guidelines for Canadian Drinking Water Quality

Figure 8: Inside the Powers Creek Water Treatment Plant

BC Drinking Water Protection Regulation

Alongside meeting the Guidelines for Canadian Drinking Water Quality, water suppliers must also adhere to schedules A and B of BC's Drinking Water Protection Regulation:

Parameter	Standard
Escherichia coli	No detectable Escherichia per 100mL
Total coliform bacteria (b) more than 1 sample in a 30 day period	At least 90% of samples have no detectable coliform bacteria per 100mL and no sample has more than 10 total coliform bacteria per 100mL

Table 3.2: Water Quality Standards for Potable Water

Population Served by the Prescribed Water Supply System:	Number of Samples Per Month
Less than 5000	4
5000 to 90 000	1 per 1 000 of population
more than 90 000	90 plus 1 per 10 000 of population in excess of 90 000

Table 3.3: Frequency of Monitoring Samples for Prescribed Water Supply Systems

The City of West Kelowna surpasses Schedule B's sampling requirements of 30 tests per month given the combined service populations of the Powers Creek Water Service Area (12,000) and the Rose Valley Water Service Area (18,000). Those samples satisfy the E. coli requirements as per schedule A.

The Guidelines further states that chemical substances are generally only a concern if they are present above guideline levels, and you are exposed to them over a period of years.

Turbidity

Turbidity is the measure of suspended particles, which can interfere with disinfection. Note the water after treatment leaving the treatment plants never exceeded the MAC of 1NTU outlined by Canada Health guidelines. Turbidity within the distribution can indicate a disturbance within the distribution network due to hydrant use, flushing activities, main breaks, changes in flow or water quality events.

2025 Powers Creek Turbidity Exceedance	
Testing Location	Month of and Cause for Exceedance
End-of-Line	May - The PRV coming into the pressure zone registered a spike in flow, creating a turbidity spike. The entire area was investigated and the turbidity was resampled at 2pm and found to be 0.09 NTU.

Table 3.4: 2025 Exceedances for Turbidity in the Powers Creek Service Area

2025 Powers Creek Total Coliform Exceedance	
Testing Location	Month of and Cause for Exceedance
Glenrosa Resrevoir Cell #1	June - A sample from Glenrosa Resrevoir Cell #1 came back with a positive hit for Total Coliforms. Follow up sampling was completed three consecutive days on all three cells and a sample station in the pressure zone the reservoir feeds. All results came back for both Total Coliforms and E.coli as <1 CFU/100mL.

Table 3.5: 2025 Exceedances for Total Coliforms in the Powers Creek Service Area

Turbidity Caused by Disinfection Byproducts (Trihalomethanes & Haloacetic Acids)

Trihalomethanes (THM) and Haloacetic Acids (HAA) are disinfection byproducts that form when chlorine reacts with naturally occurring organic matter. Health Canada has set a maximum acceptable concentration (MAC) for THMs and HAAs as 0.10mg/L and 0.08mg/L respectively. The MAC is based on long-term exposure and is designed to minimize the potential health risks. The MAC compliance is based on the locational running average where the average concentration of THMs and HAAs is calculated at each sampling location based on the four quarterly samples taken over the last 12 months. This method helps account for seasonal fluctuations and provides more representative chronic exposure risks, rather than a single snapshot. Testing results for disinfection byproducts can be found in Appendix C.

4 EVOLVING GUIDELINES

Providing safe, reliable drinking water year-round is a complex task which requires the ability to adapt to changes such as new technologies, climate change, aging infrastructure, and updated requirements or scientific findings. The City of West Kelowna works to adapt the water treatment and supply system to maintain its water quality in line with current and evolving standards.

Cross Connection Program

The City runs a Cross Connection program through the FAST Manager application. There are 628 properties with 1,226 cross connection devices requiring annual testing. In 2025, a key area of focus was cross-connection protection for agricultural service connections that share the same distribution network as domestic services. A total of 208 such connections were identified across both distribution systems, including 138 in Powers Creek Water Service Area and 70 in Rose Valley Water Service Area.

The program further prioritized properties designated as 'Farm Status' through BC Assessment—representing a higher risk—achieved compliance. By the end of 2025, approximately 82% of these properties in Powers Creek Water Service Area and 66% in Rose Valley Water Service Area were compliant.

Looking ahead, the next irrigation season will require installation and testing of cross-connection protection devices by the end of May 2026 for all agricultural connections.

Water Age Management

In 2025, the utility implemented several targeted operational and infrastructure measures to improve water age management across the distribution system. A key initiative was the installation of a circulation pump at the Blackwood Reservoir, which enhances internal mixing and promotes consistent turnover, reducing areas of stagnation. Additionally, temperature profiling was conducted at multiple reservoirs to better understand thermal stratification and its impact on water quality and disinfectant decay. This data supports more informed operational decisions to mitigate water age-related risks. A new re-chlorination system at Menu Pump Station was also implemented to maintain adequate disinfectant residuals in areas where extended residence times cannot be fully eliminated through hydraulic improvements alone.

Further investments in system infrastructure were made to support ongoing and future water age reduction efforts. The utility procured a solar-powered circulation pump for the Mission Hill Reservoir, which will improve sustainability while enhancing mixing once installed. In addition, receptacles and conduits were installed at select sites to facilitate the future deployment of additional circulation pumps,

allowing for scalable improvements to reservoir performance. Collectively, these actions demonstrate a proactive and strategic approach to managing water age, improving disinfectant residual maintenance, and safeguarding overall drinking water quality.

5 WATER SYSTEM RISKS

Low Water Capacity in the Summer

As is the case with any water system relying on surface flow from precipitation and snowmelt, the hot and dry summer months pose the risk of having reduced water volume which can pose challenges in meeting the water demands of the population. This is compounded by the fact that water needs are higher in the summer due to irrigation and agricultural needs.

Mitigation Measures

Several measures are in place to safeguard the water system and ensure safe and reliable access. A few notable examples include:

- A cross-connection control program in our bylaw which restricts any person from creating a connection which may introduce contaminants to the system. This includes the requirement that backflow valves are in place at all private connections.
- Corrosion control measures in the form of using cathodic protected infrastructure.
- Implementation of watering restrictions to reduce water demand during times of peak consumption.

Figure 10: Winery Overlooking Okanagan Lake

6 Water Use and Water Conservation

2025 Water Use

Water use needs for the City of West Kelowna varies widely between the seasons due to the irrigation and agricultural needs in the summer months. A peak flow of 64.07ML/d was measured on June 11, 2025.

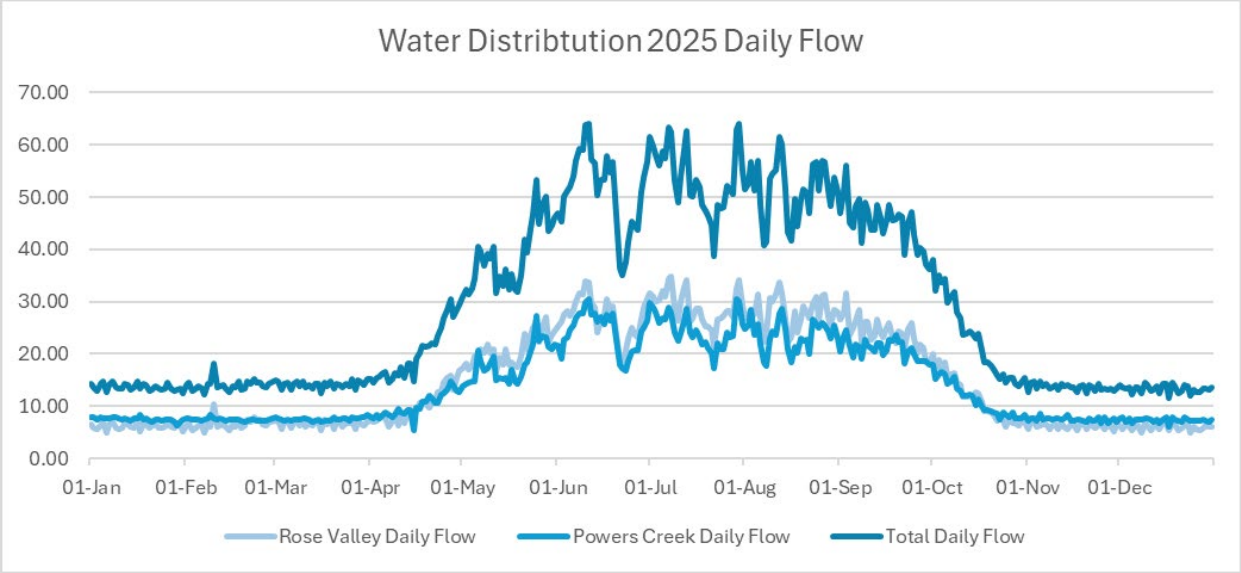

Figure 11: Treated Water 2025 Daily Flow

Figure 12: Jackpine Lake (PCWSA)

Projected Future Water Use

West Kelowna's Official Community Plan which was adopted in summer of 2023 provides population projections starting in 2021 forward to 2050. This increased population will naturally increase the demands of our water system. A rough estimate of our water needs by then are provided in Table 6.1 below using the same percentage increase displayed in the population projections. As a majority of the increased water demand in the summer months is due to agriculture as noted above, these numbers only provide a rough (and likely conservative) estimate as breakdown of population type is not considered for the purpose of this calculation.

Year	2021	2030	2040	2050
Population	36,085.00	41,961.00	48,223.00	54,147.00
Percent Growth	100%	116%	134%	150%
Median	21.33	24.81	33.15	49.75
Mean	25.95	30.18	40.33	60.51
Peak Daily Flow	63.85	74.25	99.22	148.89

Table 6.1: Projected Future Water Use

Rose Valley Water Treatment Plant has the capacity to deliver 70ML per day and was designed to increase capacity to 115ML per day to meet demands in the future. Powers Creek Water Treatment Plant is designed with a hydraulic capacity of 81ML per day. This combined treatment capacity between the two plants surpasses even the 2050 estimated peak daily demand.

Water Conservation

West Kelowna employs multiple methods to conserve water, including the following ongoing strategies:

Consumption-Based Metering and Billing

The City is currently implementing a multi-year program to replace aging water meters, many of which are now over 15 years old. Upgrading to modern, reliable meters will enhance the accuracy of water consumption readings and ensure that customers are billed fairly based on actual usage, particularly for outdoor watering activities. This usage-based approach means that the more water a customer uses, the more they pay—thereby encouraging conservation and rewarding efficient use with lower quarterly bills. Residential water rates are structured in a three-tier system that increases with cumulative consumption, providing an added incentive for customers to reduce usage.

In 2025 the metering program was fully staffed with four meter-technicians who replaced 1,897 meters. Additionally, 186 new meters were installed throughout the city.

The new meters also provide a customer-based software called Eye-On-Water, in which residents can create an account and see their water usage daily and set alerts if continuous water flow is detected over a 24-hour period indicating a potential leak.

Marketing and Public Information

The City's most effective communication tools, which are immediately available and readily used:

- E-notifications sent directly to the inboxes of more than three dozen local and regional media and more than 5,000 subscribers.
- Digital and print publications on popular online sites such as Castanet and in the WestK News weekly newspapers.
- Calls to action on the City's homepage and water webpage at westkelownacity.ca and westkelownacity.ca/wateringregulations.
- Two digital reader boards on arterial roads and highways.
- Recurring organic posts and paid ads on Facebook and Instagram, and tweets on X throughout the irrigation season.
- Reminders posted on quarterly bills, coordinated with Utility Billing staff.

Public notices also include the use of water regulations as needed to reduce usage. These measures begin at Stage 1, which is always in effect (unless another stage is currently in effect) and increase through stages 2, 3, and 4 which reduce outdoor watering consumption by 30%, 60%, and 100% respectively. These different stages are put into effect depending on rainfall and reservoir levels

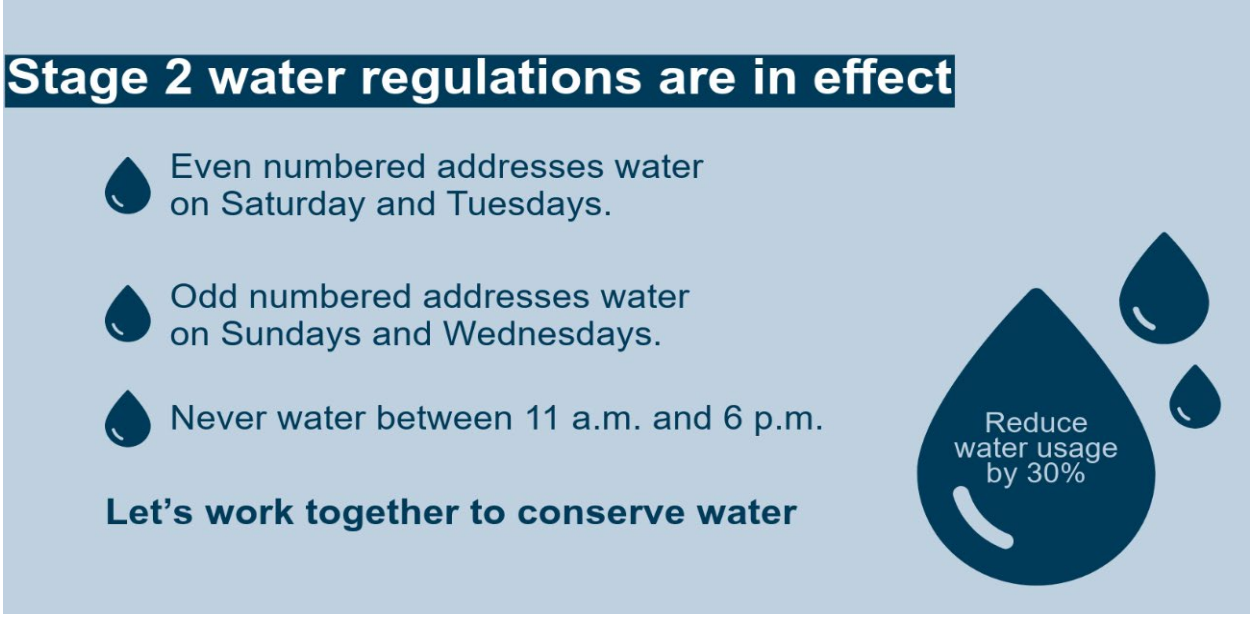

Figure 13: City of West Kelowna Stage 2 Water Regulations

Water Loss Management and Leak Reduction

Since 2014, the City has coordinated a leakage detection program, which uses equipment, co-funded by the Okanagan Basin Water Board, to assist staff in finding leaks and making repairs. The Water Utility Master Plan found that up to 29 per cent of water supply was potentially being lost through leaks within the distribution system, with the detection program's goal of reducing losses to 10 per cent.

7 SOURCE WATER PROTECTION

The City of West Kelowna has had an official Source Water Protection plan in place since 2016 when Urban Systems Inc. performed an in-depth analysis of both the Powers Creek and Lambly Creek watershed areas. This analysis was coupled with a protection plan tailored for each watershed which guides the city in making decisions to protect our drinking water at its source.

This comprehensive plan details many aspects of source water protection including:

- Forestry: Eliminating forest service road runoff into reservoir through ditches and curbing
- Access: Restricting access to sensitive areas to prevent human-introduced contamination
- Monitoring: Continue raw water quality monitoring to identify problems and be able to address them swiftly
- Wildfire Preparedness: Plan harvesting to reduce fuel loads to create defensible zones

This plan goes on to outline monitoring practices, recommendations to improve protection and sustainability, and a range of potential risks and planned responses in those events.

Figure 14: Paynter Lake, one of the many source water lakes in the Powers Creek Water Service Area

8 EMERGENCY RESPONSE & CONTINGENCY PLAN SUMMARY

The City of West Kelowna references the Central Okanagan Regional District's Emergency Response Manual for Water Systems, published in 2020 and updated in 2024, for instances of emergency relating to the drinking water system. The stated goal of this plan is to reduce the risk and overall effects of these emergencies. It outlines steps which water operations staff must undertake in a variety of emergency scenarios including potable water contamination, water main failure, loss of source water, power failures, or natural disasters such as wildfires or earthquakes. This document is updated on an annual basis.

The responses to the emergencies presented in this document are broken down into short, concise Response Actions which clearly indicate to whom the responsibility falls to carry out these actions. A list is also included of all relevant staff and organizations which need to be informed as well as their phone numbers. This is to ensure that the correct people are notified ASAP if an emergency involving the water system does occur. Drinking water supply and drinking water safety are of paramount importance as it has direct impact on health and also on firefighting efforts. As such, a multidisciplinary response is often needed involving not just the City, but also the regional district, communications organizations, and health authorities.

Figure 15: Crews fixing a water main break in West Kelowna

9 WATER SYSTEM MANAGEMENT

The City of West Kelowna has a highly qualified team of operators who oversee a robust maintenance program for our pump stations, lake intakes, reservoirs and distribution system.

Public Works Staff Certifications				
Level of Certification	Water Distribution	Water Treatment Distribution	Powers Creek WTP and Rose Valley WTP	PCWTP/RVWTP Distribution Tickets
Operator in Training	0	0	0	0
Level 1	6	2	3	2
Level 2	7	1	3	4
Level 3	4	0	5	2
Level 4	0	1	2	1
Total	17	4	13	9

Table 9.1: Number of public works staff that hold EOCP certifications

Figure 16: Crews performing maintenance work

Figure 17: Pump Station Interior

System Maintenance and Management

Distribution

- Watermains are flushed using a unidirectional procedure. The following zones were flushed in 2025:
  - **Zone SS03** Sunnyside Neighborhood – April 2nd to April 11th
  - **Zone RV01** Rose Valley Neighborhood – April 15th to May 14th
  - **Zone RV02** West Kelowna Business Park & Boucherie Centre – May 15th to June 24th
  - **Zone RV03 A-D** Lakeview Heights & Casa Loma Neighborhoods – July 7th to Sept 16th
  - **Zone RV04A** Shannon Woods/View/Highlands Neighborhoods – Sept 17th to Oct 2nd
  - **Zone RV04B** Tallus Ridge Neighborhood – Oct 3rd to Oct 16th
  - **Zone RV05A** Lower Tallus Ridge Neighborhood – Oct 20th to Dec 5th

- Fire Hydrants are completely disassembled and inspected on an as-needed basis
- Painting and weed whacking are completed around the hydrants as needed

Reservoirs

- Weekly security checks of tanks and compounds are completed
- Monthly reservoir water quality testing is conducted
- Human-made reservoirs are cleaned every 3-5 years

Pump Station

- Pumps and chlorination system are checked weekly. There are seven locations throughout both water systems that have re-chlorination occurring
- Check valves and control valves are inspected daily
- Back-up generator run testing is done monthly
- Generator load testing and maintenance are completed annually

Watermain Flushing

Watermain flushing is a process of forcing water through water mains at high speed to scour and clear pipes of sediment that may have accumulated from our source water. This is often done using a fire hydrant to allow water to flow out of the pipe system and into storm infrastructure. A precautionary water quality advisory is put in place during flushing in the event sediment can flow through into residential taps. More information on the city's flushing program can be found at westkelownacity.ca/flushing.

Flushing communications provided to the public in 2025 were enhanced to improve program awareness and provide clearer educational information regarding watermain flushing activities. Signage was updated to explicitly identify when a Water Quality Advisory is associated with flushing operations, reducing potential public confusion.

In addition, the Utility refined its operational approach by subdividing larger flushing zones into smaller, more manageable areas. This adjustment minimized the duration of Water Quality Advisories for any given location. This approach was implemented in several larger zones, including RV03, RV04, and RV05, resulting in more targeted flushing activities and reduced customer impact.

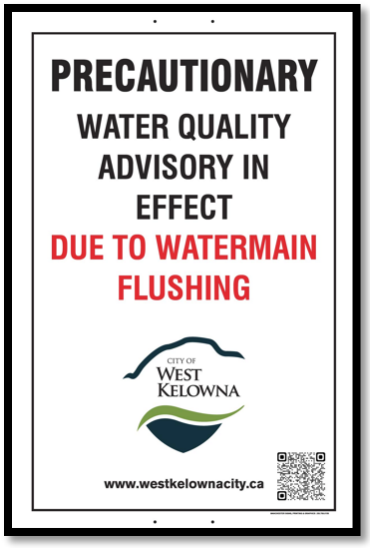

Figure 18 - Watermain Flushing Advisory Signage

2025 Water Main Repairs	
Date	Location of Break
28-Jan-25	DOBBIN RD
10-Feb-25	HUDSON RD
19-Mar-25	VINEYARD VIEW DR
16-May-25	SOMERSET RD
27-Jun-25	SUNNYSIDE RD
29-Jun-25	SUNNYSIDE RD
23-Jul-25	MARLYN CRT
13-Aug-25	BEVERLY PL
16-Jun-25	SHETLER DR
01-Oct-25	WETTON RD
24-Oct-25	MCTAGGART RD
02-Dec-25	MCCOY

Table 9.2: Water Main Breaks in 2025

Watermain Breaks

In the event of a watermain break the city has staff available 24/7 to respond to resolve the issue. These breaks can cause a reduction or loss of water pressure, and typically a boil water notice is put in place as a precaution. In 2025 the city completed 12 watermain repairs, 59 service connection repairs where the break was between the main and the curb stop and nine curb stops were repaired or replaced.

Cross Connection

All agricultural, industrial, commercial, and institutional water customers are required to install and maintain a backflow prevention device, to reduce the possibility of a back-siphoning or back-pressure event. These types of devices are mandatory because they protect the City's drinking water supply by preventing backflow contamination. Unlike some neighbouring communities, the City of West Kelowna provides potable water to all our customers including agricultural, industrial, commercial, institutional and residential. All water is treated and is connected to our network and therefore backflow preventers are an important tool for reducing the risk of contamination to the public drinking water system.

Frequently Asked Questions about Water Quality

Does West Kelowna add fluoride to the water?

- No, the City of West Kelowna does not add fluoride to the water.

What is the pH of West Kelowna's Water?

- The pH of West Kelowna's water usually ranges from 7.5 - 8.5

How can I reduce possible exposure to lead from household plumbing?

- To the best of our knowledge, the City of West Kelowna does not have lead pipes for water mains and service connections. Items on private property that may contain lead include:
    - Lead solder used to join copper pipes (prior to 1986).
    - Brass fittings on faucets.

A few simple things one can do to reduce exposure to lead in the drinking water include:

- Run the tap until it is cold before drinking or cooking with water from that tap.
- Replace brass fittings.

- Inspect the aerators on screens at the tap monthly and remove any debris.
- Install a water filter on the tap that is certified to the NSF International standard for removal of lead.

What causes my water to become discoloured?

- Sediment and organic matter from the source water can cause discolouration. It can also happen within the distribution system if a fire hydrant is flushed, a water main break occurs or a plumbing issue arises at your home such as with your filter, softener or hot water tank.

10 APPENDICES

Appendix A

Water Treatment Plant Test Results Summary

Rose Valley WTP 2025				
2025	Raw Water Turbidity	Treated Water Turbidity	Treated Water pH	Total Bacterialogical Samples
January	0.27	0.02	7.65	28
February	0.29	0.03	7.66	33
March	0.47	0.03	7.66	28
April	1.42	0.03	7.87	37
May	0.72	0.04	7.68	39
June	1.42	0.03	7.63	40
July	1.58	0.03	7.66	57
August	2.32	0.05	7.62	39
September	2.27	0.03	7.47	38
October	2.09	0.02	7.52	40
November	1.17	0.02	7.86	39
December	0.74	0.02	7.93	38
2025 Average	1.27	0.03	7.68	456

Table A-1: Rose Valley Water Treatment Plant Testing Data 2025

Powers Creek WTP 2025				
2025	Raw Water Turbidity	Treated Water Turbidity	Treated Water pH	Total Bacterialogical Samples
January	0.83	0.02	7.71	28
February	1.06	0.03	7.71	25
March	4.73	0.03	7.49	29
April	6.40	0.03	7.73	26
May	2.33	0.02	7.70	11
June	0.68	0.03	7.69	21
July	0.55	0.03	7.70	14
August	0.64	0.03	7.70	10
September	1.04	0.03	7.70	9
October	0.90	0.03	7.71	10
November	1.24	0.03	7.72	10
December	1.75	0.03	7.71	14
2025 Average	1.82	0.03	7.69	207

Table A-2: Powers Creek Water Treatment Plant Testing Data 2025

Appendix B

Distribution Water Quality Summary

Water Quality field data results reflect the noted location within the distribution system at the time of grab sample collection. There are nine locations throughout both distribution systems that have online analyzers with real time data available:

- Blackwood PS
- Menu PS
- Upper Boucherie PS
- Lower Boucherie PS
- Lakeview Cove PS

- Glenrosa Res
- Lateral One PS
- Smith Creek Res & PS
- Dixie PS

	Turbidity (NTU)				FCR (mg/L)			Water Temp (˚C)		pH	
System	# of Tests	Average	Range	# of Exceedances	# of Tests	Average	Range	Average	Range	Average	Range
RVWSA	996	0.18	0.02-0.79	0	1013	0.01	1.64	962	1.4-25.5	7.54	6.50-8.75
PCWSA	473	0.17	0.05 - 1.36	1	473	0.56	0.07 - 1.70	10.4	1.2 - 22.6	7.55	6.83 - 8.52

Table B-1: Overall grab sampling WQ collected throughout both distribution systems in 2024.

CARO Lab	Total Coliforms			E.coli		
System	# of Tests	Average	# of exceedances	# of Tests	Average	# of exceedances
RVWSA	230	<1	0	230	<1	0
PCWSA	197	<1	1	197	<1	0

Table B-2: Bacteriological results for 2025 in both distribution systems tested via external analytical lab CARO Analytical Services.

In-House Lab	Total Coliforms			E.coli		
System	# of Tests	Average	# of exceedances	# of Tests	Average	# of exceedances
RVWSA	305	<1	0	305	<1	0
PCWSA	107	<1	0	107	<1	0

Table B-3: Bacteriological results for 2025 in both distribution systems tested via internal lab at the RVWTP utilizing the IDEXX methodology.

Appendix C

Turbidity Results for Rose Valley & Powers Creek Water Service Areas

2025 Rose Valley Water Service Area - Grab Sample Turbidity (NTU)				
Sampling Location	# of Tests	Average	Range	# of Exceedances
RV Trails	14	0.13	0.09-0.21	0
Thacker	67	0.17	0.08-0.61	0
Bridgeview	40	0.17	0.06-0.65	0
Shannon Way	53	0.14	0.07-0.59	0
Tallus Res	41	0.18	0.10-0.28	0
Lakeview Cove	37	0.16	0.08-0.39	0
Blackwood	73	0.19	0.07-0.74	0
McPhail	42	0.18	0.09-0.31	0
Lower Horizon	64	0.15	0.06-0.61	0
Pettman	38	0.21	0.10-0.77	0
Menu	72	0.14	0.05-0.59	0
Pritchard	73	0.17	0.08-0.50	0
Vineyard View	50	0.18	0.06-0.41	0
Lower Boucherie	36	0.22	0.06-0.43	0
Upper Boucherie	38	0.2	0.11-0.79	0
Sunnyside	21	0.18	0.09-0.32	0
Green Bay	21	0.22	0.11-0.32	0
Additional Samples	216	Not Available	Not Available	0
Total	996	0.18	0.02-0.79	0

Table C-1: Turbidity in the RVWSA distribution network 2025.

2025 Power's Creek Water Service Area - Grab Sample Turbidity (NTU)				
Sampling Location	# of Tests	Average	Range	# of Exceedances
Lateral One	74	0.16	0.05-0.96	0
Old Okanagan	21	0.22	0.09-0.65	0
Webber	21	0.13	0.07-0.32	0
McIver	53	0.13	0.07-0.24	0
End-Of-Line	53	0.14	0.06-1.36	1
Bulk Water Stn	73	0.20	0.07-0.82	0
SC Res	29	0.20	0.08-0.55	0
SC Res Cell	10	0.24	0.09-0.49	0
SCPS	41	0.18	0.08-0.68	0
Dixie	39	0.19	0.10-0.76	0
Glenrosa	39	0.16	0.05-058	0
Glenrosa Res Cell	10	0.16	0.09-0.22	0
Quince SS	10	0.15	0.05-0.29	0
Total	473	0.17	0.05-1.36	1

Table C-2: Turbidity in the PCWSA distribution network 2025.

Appendix D

Disinfection Byproducts Testing Results

Powers Creek Water Service Area (2025) - THM Results (mg/L) MAC=0.10mg/L				
Date	Lateral One PS	End-of-Line WQS	McIver SS	Bulk Water Stn
25-Feb-25	0.0382	0.0402	0.0766	
27-May-25	0.0267	0.0412	0.045	
19-Aug-25	0.0376	0.0365	0.0318	0.0574
25-Nov-25	0.04	0.0475	0.042	0.0541
09-Dec-25	0.0227	0.0293	0.0452	0.0307
Average	0.033	0.0389	0.0452	0.0474

Table D-1: PCWSA THM Byproduct Results

Powers Creek Water Service Area (2025 - HAA5 Results (mg/L) MAC=0.08mg/L				
Date	Lateral One PS	End-of-Line WQS	McIver SS	Bulk Water Stn
25-Feb-25	0.0238	0.03	0.0351	
27-May-25	0.0218	0.0308	0.0383	
19-Aug-25	0.0205	0.0312	0.0318	0.0277
25-Nov-25	0.0280	0.0359	0.0325	0.0376
09-Dec-25	0.0221	0.0342	0.0341	0.0349
Average	0.0232	0.0324	0.0344	0.0334

Table D-2: PCWSA HAA5 Byproduct Results

Rose Valley Distribution System (2025) - THM Results (mg/L) MAC=0.10mg/L								
Date	Rosewood PS	Thacker SS	Shannon Way SS	Menu PS	Pritchard SS	Vineyard View SS	Lower Horizon SS	Blackwood PS
25-Feb-25	0.040	0.047	0.055	0.035	0.063	0.055	0.053	0.048
27-May-25	0.0369	0.0445	0.0459	0.0411	0.0508	0.0608	0.0461	0.0448
21-Jul-25	0.2360	-	-	0.2460	-	-	-	0.2670
31-Jul-25	0.0506	-	-	0.0568	-	-	-	0.0670
19-Aug-25	0.0408	0.0567	0.0820	0.0517	0.0732	0.0505	0.0467	0.0940
25-Nov-25	0.0598	0.0740	0.0747	0.0713	0.0965	0.0946	0.0748	0.0781
Average	0.0773	0.0555	0.0644	0.0851	0.0709	0.0653	0.0551	0.0998

Table D-3: Rose Valley WSA THM Byproduct Results

Rose Valley Distribution System (2025) - HAA5 Results (mg/L) MAC=0.10mg/L								
Date	Rosewood PS	Thacker SS	Shannon Way SS	Menu PS	Pritchard SS	Vineyard View SS	Lower Horizon SS	Blackwood PS
25-Feb-25	0.031	0.037	0.037	0.033	0.042	0.040	0.041	0.037
27-May-25	0.0262	0.0339	0.0349	0.0298	0.0357	0.0403	0.0365	0.0316
21-Jul-25	0.0919	-	-	0.0865	-	-	-	0.0963
31-Jul-25	0.0339	-	-	0.0342	-	-	-	0.0434
19-Aug-25	0.0333	0.0375	0.0388	0.0386	0.0256	0.0273	0.0462	0.0387
25-Nov-25	0.0330	0.0371	0.0417	0.0384	0.0333	0.0328	0.0422	0.0402
Average	0.0415	0.0364	0.0380	0.0435	0.0343	0.0350	0.0415	0.0479

Table D-4: Rose Valley WSA HAA5 Byproduct Results

Appendix E

Comprehensive Chemical Summary

Powers Creek Quarterly Comprehensive Min / Max Averages (2025)							
General Method	Analyte	Units	RL	Std (CDWQG)	min	max	avg
Anions	Chloride	mg/L	0.1	AO<=250	10.2	14.00	12.27
Anions	Fluoride	mg/L	0.1	MAC=1.5	<0.10	<0.10	<0.10
Anions	Nitrate (as N)	mg/L	0.01	MAC=10	<0.010	0.03	0.02
Anions	Nitrite (as N)	mg/L	0.01	MAC=1	<0.010	<0.010	<0.010
Anions	Sulfate	mg/L	1	AO<=500	3.7	4.30	3.93
Calculated Parameters	Langelier Index	-	-5	N/A	-1.7	-1.00	-1.23
Calculated Parameters	Total Trihalomethanes	mg/L	0.004	MAC=0.1	0.0348	0.05	0.04
Calculated Parameters	Hardness, Total (as CaCO3)	mg/L	0.5	None Required	40.7	46.50	43.40
Calculated Parameters	Solids, Total Dissolved (calc)	mg/L	1	AO<=500	62.5	76.20	67.57
Field Parameters	Chlorine, Free	mg/L	0.02	N/A	0.77	0.89	0.83
Field Parameters	Turbidity	NTU	0.1	OG<1	0.1	0.13	0.12
Field Parameters	pH	pH units	0.1	7.0-10.5	7.6	7.80	7.67
General Parameters	Temperature, at pH	°C		N/A	19.7	22.60	21.57
General Parameters	Colour, True	CU	5	AO<=15	<5.0	<5.0	<5.0
General Parameters	Alkalinity, Total (as CaCO3)	mg/L	1	N/A	35.3	55.50	43.50
General Parameters	Alkalinity, Phenolphthalein (as CaCO3)	mg/L	1	N/A	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Bicarbonate (as CaCO3)	mg/L	1	N/A	35.3	55.50	43.50
General Parameters	Alkalinity, Carbonate (as CaCO3)	mg/L	1	N/A	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Hydroxide (as CaCO3)	mg/L	1	N/A	<1.0	<1.0	<1.0
General Parameters	Carbon, Total Organic	mg/L	0.5	N/A	2.75	3.31	3.03
General Parameters	Cyanide, Total	mg/L	0.002	MAC=0.2	0.0034	0.00	0.00
General Parameters	Turbidity	NTU	0.1	OG<1	<0.10	0.38	0.19
General Parameters	pH	pH units	0.1	7.0-10.5	6.64	7.21	6.87
General Parameters	Conductivity (EC)	uS/cm	2	N/A	126	141.00	131.67
Haloacetic Acids	Monochloroacetic Acid	mg/L	0.002	N/A	0.0027	0.00	0.00
Haloacetic Acids	Monobromoacetic Acid	mg/L	0.002	N/A	<0.0020	<0.0035	<0.0020
Haloacetic Acids	Dichloroacetic Acid	mg/L	0.002	N/A	0.0118	0.01	0.01
Haloacetic Acids	Trichloroacetic Acid	mg/L	0.002	N/A	0.0086	0.01	0.01
Haloacetic Acids	Dibromoacetic Acid	mg/L	0.002	N/A	<0.0020	<0.0020	<0.0020
Haloacetic Acids	Total Haloacetic Acids (HAA5)	mg/L	0.002	MAC=0.08	0.0238	0.02	0.02
Microbiological Parameters	Coliforms, Total	CFU/100	1	MAC = 0	<1	<1	<1
Microbiological Parameters	E. coli	CFU/100	1	MAC = 0	<1	<1	<1

Table E-1: Powers Creek Chemical Summary 1 of 2

Powers Creek Quarterly Comprehensive Min / Max Averages (2025)							
General Method	Analyte	Units	RL	Std (CDWQG)	min	max	avg
Total Metals	Aluminum, total	mg/L	0.005	OG<0.1	0.0136	0.02	0.02
Total Metals	Antimony, total	mg/L	0.0002	MAC=0.006	<0.00020	<0.00020	<0.00020
Total Metals	Arsenic, total	mg/L	0.0005	MAC=0.01	<0.00050	<0.00050	<0.00050
Total Metals	Barium, total	mg/L	0.005	MAC=2	0.0116	0.01	0.01
Total Metals	Boron, total	mg/L	0.05	MAC=5	<0.0500	<0.0500	<0.0500
Total Metals	Cadmium, total	mg/L	1E-05	MAC=0.007	<0.000010	<0.000010	<0.000010
Total Metals	Calcium, total	mg/L	0.2	None Required	13.1	14.60	13.97
Total Metals	Chromium, total	mg/L	0.0005	MAC=0.05	<0.00050	<0.00050	<0.00050
Total Metals	Cobalt, total	mg/L	0.0001	N/A	<0.00010	<0.00010	<0.00010
Total Metals	Copper, total	mg/L	0.0004	MAC=2	0.00484	0.01	0.01
Total Metals	Iron, total	mg/L	0.01	AO<=0.1	<0.010	<0.010	<0.010
Total Metals	Lead, total	mg/L	0.0002	MAC=0.005	0.00021	0.00	0.00
Total Metals	Magnesium, total	mg/L	0.01	None Required	1.81	2.42	2.05
Total Metals	Manganese, total	mg/L	0.0002	MAC=0.12	0.00233	0.01	0.00
Total Metals	Mercury, total	mg/L	4E-05	MAC=0.001	<0.000040	<0.000040	<0.000010
Total Metals	Molybdenum, total	mg/L	0.0001	N/A	0.00084	0.00	0.00
Total Metals	Nickel, total	mg/L	0.0004	N/A	0.00046	0.00	0.00
Total Metals	Potassium, total	mg/L	0.1	N/A	0.99	1.17	1.05
Total Metals	Selenium, total	mg/L	0.0005	MAC=0.05	<0.00050	<0.00050	<0.00050
Total Metals	Sodium, total	mg/L	0.1	AO<=200	6.61	8.58	7.70
Total Metals	Strontium, total	mg/L	0.001	MAC=7	0.0471	0.05	0.05
Total Metals	Uranium, total	mg/L	2E-05	MAC=0.02	<0.000020	<0.000020	<0.000020
Total Metals	Zinc, total	mg/L	0.004	AO<=5	<0.0040	<0.0040	<0.0040
Volatile Organic Compounds	Bromodichloromethane	mg/L	0.001	N/A	0.0013	0.0014	0.00
Volatile Organic Compounds	Bromoform	mg/L	0.001	N/A	<0.0010	<0.0010	<0.0010
Volatile Organic Compounds	Chloroform	mg/L	0.001	N/A	0.0335	0.0456	0.04
Volatile Organic Compounds	Dibromochloromethane	mg/L	0.001	N/A	<0.0010	<0.0010	<0.0010

Table E-2: Powers Creek Chemical Summary 2 of 2

Rose Valley Quarterly Comprehensive Min / Max Averages (2025)							
General Method	Analyte	Units	MRL	Std (CDWQG)	Min	Max	Avg
Anions	Chloride	mg/L	0.1	AO<=250	10.40	14.00	11.80
Anions	Fluoride	mg/L	0.1	MAC=1.5	0.17	0.17	0.17
Anions	Nitrate (as N)	mg/L	0.01	MAC=10	0.04	0.20	0.09
Anions	Nitrite (as N)	mg/L	0.01	MAC=1	<0.010	<0.010	<0.010
Anions	Sulfate	mg/L	1	AO<=500	6.80	8.40	7.55
Calculated Parameters	Langelier Index	-	-5	N/A	-1.20	-0.40	-0.75
Calculated Parameters	Total Trihalomethanes	mg/L	0.004	MAC=0.1	0.04	0.16	0.07
Calculated Parameters	Hardness, Total (as CaCO3)	mg/L	0.5	None Required	82.70	97.80	90.40
Calculated Parameters	Solids, Total Dissolved (calc)	mg/L	1	AO<=500	111.00	120.00	117.00
Field Parameters	Chlorine, Free	mg/L	0.02	N/A	0.80	1.16	0.97
Field Parameters	Turbidity	NTU	0.1	OG<1	0.10	0.15	0.13
Field Parameters	pH	pH units	0.1	7.0-10.5	7.60	7.94	7.79
General Parameters	Temperature, at pH	°C		N/A	19.70	22.20	21.33
General Parameters	Colour, True	CU	5	AO<=15	<5.0	<5.0	<5.0
General Parameters	Alkalinity, Total (as CaCO3)	mg/L	1	N/A	77.20	91.10	87.28
General Parameters	Alkalinity, Phenolphthalein (as CaCO3)	mg/L	1	N/A	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Bicarbonate (as CaCO3)	mg/L	1	N/A	77.20	91.10	87.28
General Parameters	Alkalinity, Carbonate (as CaCO3)	mg/L	1	N/A	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Hydroxide (as CaCO3)	mg/L	1	N/A	<1.0	<1.0	<1.0
General Parameters	Carbon, Total Organic	mg/L	0.5	N/A	3.25	3.80	3.53
General Parameters	Cyanide, Total	mg/L	0.002	MAC=0.2	<0.0020	0.00	0.00
General Parameters	Turbidity	NTU	0.1	OG<1	<0.10	1.37	0.22
General Parameters	pH	pH units	0.1	7.0-10.5	7.04	7.83	7.25
General Parameters	Conductivity (EC)	uS/cm	2	N/A	217.00	240.00	228.75
Haloacetic Acids	Monochloroacetic Acid	mg/L	0.002	N/A	<0.0020	<0.0040	0.00
Haloacetic Acids	Monobromoacetic Acid	mg/L	0.002	N/A	<0.0020	0.00	0.00
Haloacetic Acids	Dichloroacetic Acid	mg/L	0.002	N/A	0.01	0.02	0.01
Haloacetic Acids	Trichloroacetic Acid	mg/L	0.002	N/A	0.01	0.02	0.02
Haloacetic Acids	Dibromoacetic Acid	mg/L	0.002	N/A	<0.0020	<0.0020	<0.0020
Haloacetic Acids	Total Haloacetic Acids (HAA5)	mg/L	0.002	MAC=0.08	0.01	0.09	0.05
Microbiological Parameters	Coliforms, Total	CFU/100	1	MAC = 0	<1	<1	<1
Microbiological Parameters	E. coli	CFU/100	1	MAC = 0	<1	<1	<1

Table E-3: Rose Valley Chemical Summary 1 of 2

** Exceedances of HAAs and THMs were noted in July due to pretreatment of Sodium Hypochlorite to control Manganese levels prior to the operation of the Sodium Permanganate system. No further Disinfection By-product exceedances were noted after early July.

** Exceedance of Turbidity was noted as an anomaly in the February quarterly sample from the third-party laboratory. Immediate follow up handheld samples were taken and no exceedance was observed in any handheld samples as well as SCADA monitoring.

Rose Valley Quarterly Comprehensive Min / Max Averages (2025)							
General Method	Analyte	Units	MRL	Std (CDWQG)	Min	Max	Avg
Total Metals	Aluminum, total	mg/L	0.005	OG<0.1	0.0058	0.0074	0.0067
Total Metals	Antimony, total	mg/L	0.0002	MAC=0.006	<0.00020	<0.00020	<0.00020
Total Metals	Arsenic, total	mg/L	0.0005	MAC=0.01	<0.00050	<0.00050	<0.00050
Total Metals	Barium, total	mg/L	0.005	MAC=2	0.0067	0.0127	0.01
Total Metals	Boron, total	mg/L	0.05	MAC=5	<0.0500	<0.0500	<0.0500
Total Metals	Cadmium, total	mg/L	0.00001	MAC=0.007	<0.00001	<0.00001	<0.00001
Total Metals	Calcium, total	mg/L	0.2	None Required	24.7	28.3	26.875
Total Metals	Chromium, total	mg/L	0.0005	MAC=0.05	<0.00050	0.00233	0.0009
Total Metals	Cobalt, total	mg/L	0.0001	N/A	<0.00010	<0.00010	<0.00010
Total Metals	Copper, total	mg/L	0.0004	MAC=2	0.0012	0.00271	0.0018
Total Metals	Iron, total	mg/L	0.01	AO<=0.3	<0.010	<0.010	<0.010
Total Metals	Lead, total	mg/L	0.0002	MAC=0.005	<0.00020	<0.00020	<0.00020
Total Metals	Magnesium, total	mg/L	0.01	None Required	5.02	6.56	5.6325
Total Metals	Manganese, total	mg/L	0.0002	MAC=0.12	0.0002	0.0194	0.007
Total Metals	Mercury, total	mg/L	0.00001	MAC=0.001	<0.00001	<0.00004	<0.00004
Total Metals	Molybdenum, total	mg/L	0.0001	N/A	0.0014	0.00163	0.0015
Total Metals	Nickel, total	mg/L	0.0004	N/A	<0.00040	0.00129	0.0006
Total Metals	Potassium, total	mg/L	0.1	N/A	1.46	1.61	1.54
Total Metals	Selenium, total	mg/L	0.0005	MAC=0.05	<0.00050	<0.00050	<0.00050
Total Metals	Sodium, total	mg/L	0.1	AO<=200	9.64	11.1	10.12
Total Metals	Strontium, total	mg/L	0.001	MAC=7	0.12	0.133	0.1265
Total Metals	Uranium, total	mg/L	0.00002	MAC=0.02	<0.00002	<0.00002	<0.00002
Total Metals	Zinc, total	mg/L	0.004	AO<=5	<0.0040	<0.0040	<0.0040
Volatile Organic Compounds	Bromodichloromethane	mg/L	0.001	N/A	0.002	0.0042	0.0033
Volatile Organic Compounds	Bromoform	mg/L	0.001	N/A	<0.0010	<0.0010	<0.0010
Volatile Organic Compounds	Chloroform	mg/L	0.001	N/A	0.0388	0.0699	0.0488
Volatile Organic Compounds	Dibromochloromethane	mg/L	0.001	N/A	<0.0010	<0.0010	<0.0010

Table E-3: Rose Valley Chemical Summary 2 of 2

Appendix F

Water Sampling Locations

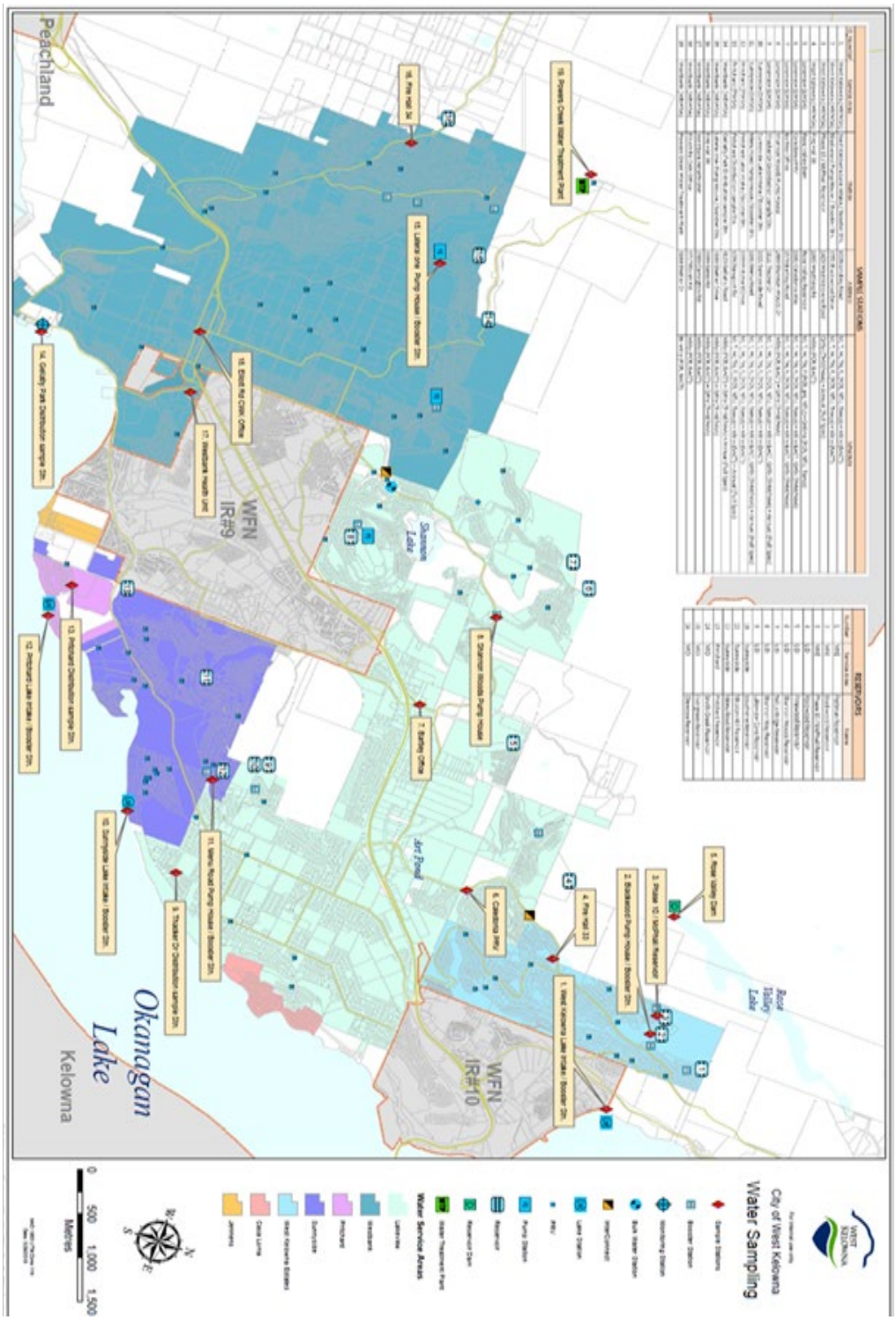

Figure 18: Map of Water Sampling Locations

Appendix G
Water Quality Definitions

Refer to the Guideline for Canada Drinking Water Quality for additional information.

Alkalinity: Refers to the capability of water to resist changing pH when an acid is added. Water is said to be low in alkalinity when it is not able to neutralize acids well.

Aesthetic Objective (AO): Aesthetic effects (e.g., taste, odour) are taken into account when they play a role in determining whether consumers will consider the water drinkable.

Boil Water Notification (BWN): A notification issued by the public utility (i.e., City of West Kelowna) as a preventative measure. Boil water advisories are issued when the microbiological quality of drinking water is suspected or confirmed to be compromised, meaning disease-causing microorganisms, such as bacteria, viruses or parasites, could be in the drinking water.

Escherichia coli (E. coli): Used as an indicator of the microbiological safety of drinking water.

Chemical or Physical parameters: Affect multiple aspects of water quality including human health, aesthetic considerations and operational considerations. Health Canada provides guidelines for chemical and physical parameters.

Disinfection By-Products (DBP): A chemical compound formed by the reaction of a water disinfectant (e.g. chlorine) with a precursor (e.g. natural organic matter) in a water supply.

Drinking Water Advisory: Drinking water advisories are public health protection messages issued by public health or regulatory authorities to inform consumers about actions they should take to protect themselves from real or potential health risks related to their drinking water supply. Advisories are generally precautionary, meaning they are typically issued before drinking water quality problems happen, and can take four forms in order of lowest to highest severity: Water Quality Advisory, Boil Water Notice, Do Not Consume Order and Do Not Use Order.

Drinking Water Officer (DWO): A person employed by Interior Health who has significant authority to require individuals (i.e., the City of West Kelowna) to undertake action to remove a threat to drinking water quality. Such authority is granted per the *Drinking Water Protection Regulation* (B.C. Reg. 200/2003) and the *Drinking Water Protection Act*.

Water System Emergency Response and Contingency Plan (ERCP): The City of West Kelowna has prepared a Water System Emergency Response Plan for its drinking water system, as required under Section 13 of the *Drinking Water Protection Regulation* (B.C. Reg. 200/2003). The Water System ERCP summarizes possible emergencies and the person's role in responding to them.

Free Chlorine Residuals (FCR): Free chlorine is defined as the concentration of residual chlorine in water present as dissolved gas (Cl2), hypochlorous acid (HOCl), and/or hypochlorite ion (OCl-). A test kit which measures free chlorine will indicate the combined concentrations of HOCl, OCl-, and Cl2.

Haloacetic Acids (HAA): A type of chlorination disinfection by-product (CDBP) formed when the chlorine used to disinfect drinking water reacts with naturally occurring organic matter (NOM) in water. Haloacetic acids are a relatively new disinfection by-product.

Hardness: Naturally occurring (sedimentary rock erosion and seepage, runoff from soils); levels generally higher in groundwater. Although hardness may have significant aesthetic effects, a guideline has not been established because public acceptance of hardness may vary considerably according to the local conditions; major contributors to hardness -- calcium and magnesium -- are not of direct public health concern.

Maximum Allowable Concentrations (MAC): Water in nature contains impurities, some of which may pose a health risk when ingested. To address this risk, Health Canada works with the provincial and territorial governments to develop guidelines that set out the maximum acceptable concentrations of these substances in drinking water. These drinking water guidelines are designed to protect the health of the most vulnerable members of society, such as children and the elderly and those with weakened immunity. The guidelines set out the basic parameters that every water system should strive to achieve to provide the cleanest, safest and most reliable drinking water possible.

Microbiological contaminants: Contaminants such as bacteria, protozoa and viruses naturally occurring in water, soil and vegetation or entering raw water sources from human and animal feces, that pose health risks to end users of public water supply and distribution systems.

pH: A measure of hydrogen ion concentration; a measure of the acidity or alkalinity of a solution. Aqueous solutions at 25 degrees Celsius with a pH less than seven are acidic, while those with a pH greater than seven are basic or alkaline. A pH of seven is neutral.

Sodium Hypochlorite solution: A liquid chlorine product used for disinfection of drinking water. Molecular formula is Na2OCl.

Total Chlorine Residual (TCR): Remaining chlorine concentration after chlorine demand of water.

Total coliforms: Total coliforms should be monitored in the distribution system because they are used to indicate changes in water quality.

Trihalomethanes (THMs): A type of chlorination disinfection by-product (CDBP) that is formed when the chlorine used to disinfect drinking water reacts with organic and non-organic matter.

Turbidity: Naturally occurring organic (decomposed plant and animal debris, microorganisms) and inorganic (clays, silts, metal precipitates) particles that reduce water quality by harbouring microorganisms and protecting them from disinfection, and entrapping heavy metals and biocides. The units of turbidity are called Nephelometric Turbidity Units (NTU), which refers to the instrument used to measure turbidity (a calibrated nephelometer).

LSI: The Langelier Index is one of several tools used by water operators for stabilizing water to control both internal corrosion and the deposition of scale. Water supply operators can optimize their water supply systems and identify leakage potentials with the Langelier Index.