

Clearbrook Waterworks District 2025 Water Quality Report



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Cover image: Reservoir C Roof Sealing; image courtesy: Ryan Federau.

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Foreword

Clearbrook Waterworks District (CWD) proudly presents the 2025 Water Quality Report to our stakeholders in order to provide a clear and complete accounting of water quality, including a full spectrum analysis of the makeup of our water. Please read on to learn more, including updates about our water system, plans to upgrade infrastructure, and clear documentation outlining the ongoing commitment of the CWD Board of Trustees and staff to maintain and deliver our high-quality, award-winning H₂O.

This report, published annually, is prepared for our stakeholders and required by the provincial health legislation (Drinking Water Protection Act). The report has been prepared in collaboration with Dr. Ineke Kalwij, of Kalwij Water Dynamics Inc. (KWD). The report includes contributions from James Wiens (Certified Water Professional, CWP), CWD Field Supervisor and Ryan Federau (CWP), the District's Water Quality Technician.

CWD remains in compliance with all provincial and federal regulations relating to the supply and delivery of potable water, at all times. To that end, we maintain a close and collaborative relationship with Fraser Health Authority, and we value their feedback. We remain committed to the protection of public health through the uninterrupted supply of safe and clean drinking water to our ratepayers.

Our highly trained water system operators are certified through the Environmental Operators Certification Program, where constant education and training are necessary to maintain a valid certification. Our operators are skilled, diligent, and dedicated to maintaining and improving the system. CWD employs four Level II Water Distribution System Operators, and our newest employee is an Operator in Training, working towards the Level I certification.

Maintaining our high standard of water quality requires a comprehensive program, utilizing proactive maintenance schedules, consistent asset management, adoption of emerging technologies, and best engineering practices. Our operators work closely with our engineering consultants to ensure all aspects of the system are designed, installed, and maintained in order to maximize the lifespan of our assets. We employ a multitude of security measures and checks to ensure the system remains safe from intrusion or contamination and our expectation is that water quality remains consistent from source to tap. We at CWD also recognize the importance of due diligence and care when it comes to managing and maintaining our production wells and our most important natural asset; the Abbotsford-Sumas Aquifer.

After a brief interruption in our water quality during the 2024 Remembrance Day weekend, 2025 saw us return to normal operations and samples have turned up no surprises. In 2025, we drew our first water samples for PFAS analysis, which is addressed later on in this report. While initial results were positive for the presence of some PFAS parameters in low levels (parts per trillion), our water remains safe and of the highest quality. We have developed a sampling plan for 2026 in consultation with Fraser Health Authority and those results will be made available in next year's report. The 2025 results are included in this report.

There is no health guideline for PFAS; only an (interim) objective based on a precautionary approach. CWD remains committed to excellence in all things and the sampling plan will create a data baseline that will guide our actions as more information comes to light through our various health agencies.

At CWD, our stated mission is to provide superior water in sufficient quantity to the residents and businesses of the District and to ensure long-term sustainability of product and service. To that end, we believe people are CWD's most valuable asset and water is its greatest resource. We remain committed to looking after the former and safeguarding the latter. Please accept my warmest thank you, on behalf of the District's Board of Trustees and staff, for your support and interest in the operations of the District. Please read on to learn more about the water quality of your award-winning system.

Respectfully submitted,

Jason Hildebrandt, CWP
Corporate Administrator

Units and Abbreviations

Units

Billion Litres	BL
Cubic metres	m ³
Cubic metres per hour	m ³ /hr
Hour(s)	hr(s)
Inch	in
Kilometres	km
Litres per second	L/s
Litres per capital per day	L/c/d
Metres	m
Micrograms per litre	µg/L
Millimetres	mm
Million Litres	ML
Million cubic metres	Mm ³
Milligrams per litre	mg/L
Minute	min
Nanograms per litre	ng/L
Percent	%
US gallons per minute	US gpm

Abbreviations

Advanced Metering Infrastructure	AMI
Aesthetic Objective	AO
Bacteriological Activity Reaction Test	BART
BC Water and Waste Association	BCWWA
Clearbrook Waterworks District	CWD
Environmental Operators Certificate Program	EOCP
Heterotrophic Aerobic Bacteria	HAB
Iron Related Bacteria	IRB
Maximum Acceptable Concentration	MAC
Ministry of Water, Land and Resource Stewardship	WLRS
Most Probable Number	MPN
Nephelometric Turbidity Units	NTU
Per-and Polyfluoroalkyl Substance	PFAS
Pharmaceuticals and personal care products	PPCPs
Slime Forming Bacteria	SLYM
Sulphate Reducing Bacteria	SRB
Supervisory Control and Data Acquisition	SCADA
Variable Frequency Drive	VFD

1. Introduction

The **2025 Annual Water Quality Report** has been prepared for our rate payers and Fraser Health Authority (Fraser Health) and summarizes pertinent water system and water quality information of Clearbrook Waterworks District (CWD). Since 1954, CWD provides potable water and fire flow protection to the area formerly known as “Clearbrook”, located within the City of Abbotsford. The water system is supplied by groundwater, with four production wells extracting water from the Abbotsford-Sumas Aquifer. CWD’s office and works yard is located at 2889 Grandview Crescent (the reservoir site).

As per regulatory requirements, under the **Drinking Water Protection Act**¹ and **Drinking Water Protection Regulation**², water purveyors are required to monitor the quality of water supply source(s), the water in the distribution system, and the water supplied to the end users. CWD is working in close collaboration with the Fraser Health drinking water officers to always ensure safe drinking water. A message from the Manager of Fraser Health Drinking Water Program, dated January 25, 2025, regarding metals in drinking water (“*Flush Message*”) is included as **Appendix A**. **Appendix B** includes information about preventing water-borne infections for people with weakened immune systems.

CWD’s website (www.clearbrookwaterworks.com) provides information for the rate payers regarding: (i) the water system & history; (ii) water rates and (e-)billing; (iii) bylaws; (iv) selected documents (water quality reports, water system map, leak relief request forms), and (v) the schedule of Board meetings and Annual General Meeting. Rate payers may also submit water meter readings through an online portal on the website.

¹https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/01009_01.

² https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/200_2003.



IMAGE | CWD'S OFFICE & WORKS YARD (RESERVOIR SITE) AT 2889 GRANDVIEW CRESCENT.

2. Water System Overview

2.1 The Water System

CWD's water system (**Figure 1**) provides potable water to residential dwellings and commercial buildings (1,435 connections as of the end of 2025), serving an estimated population of about 10,671 people³. The water system also provides water for fire flow requirements, and CWD is responsible for installing and maintaining the fire hydrants. The water system is fully metered. CWD is in the process of installing Advanced Metering Infrastructure (AMI) through the entire water system.

A combined length of an approximated 33 km of water mains distributes the water through the district. Water is distributed directly from the source (production wells) and from the reservoirs. The watermain pipe sizes vary between 150-mm (6-in) and 400-mm (16-in). With Reservoir C permanently offline, the working water storage volume is 4,500 m³ (Reservoir B).

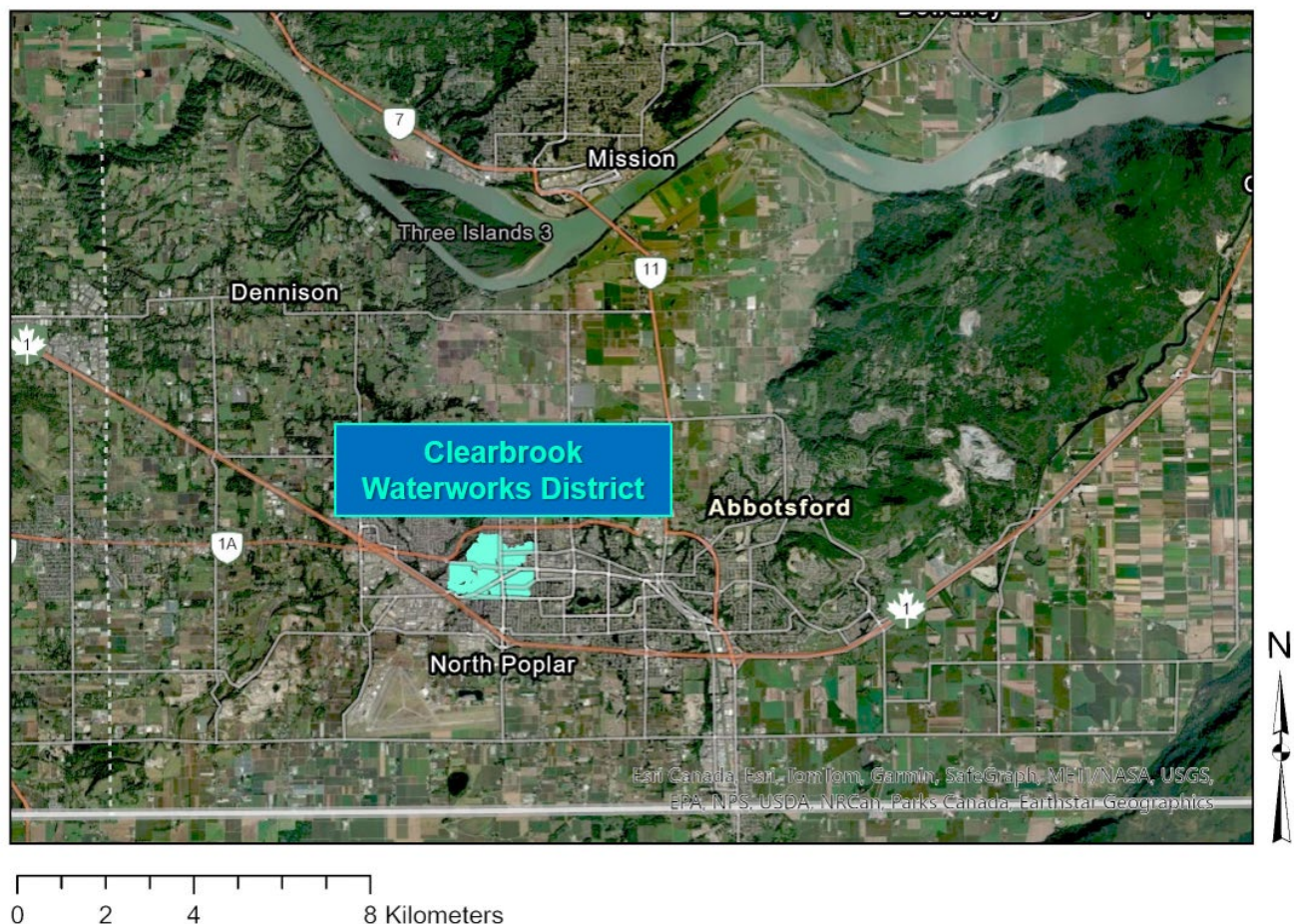


FIGURE 1 – GENERAL LOCATION OF CLEARBROOK WATERWORKS DISTRICT.

³ Population estimates as of Dec. 31, 2025 (a 1.3% annual growth rate is assumed), does not include “in transit population”.



IMAGE | WATER INFRASTRUCTURE AT THE RESERVOIR SITE.

2.2 CWD's Operators & Staff

CWD's operators are all EOCP-certified⁴ Water Distribution System Operators: four Level 2 operators and one operator-in-training. All operators are cross trained in various aspects of the water system operation and maintenance.



IMAGE |FROM LEFT TO RIGHT: Avneet Mann (Administrative Assistant), Danette Haar, CPA, CGA (Financial Administrator, Keegan Royal (Operator-in-Training), Ryan Allen (WDSO II), Ryan Federau (Water Quality Technician, WDSO II), James Wiens (Field Supervisor, WDSO II), and Jason Hildebrandt (Corporate Administrator, WDSO II).

⁴ Environmental Operators Certificate Program; for more information: <http://eocp.ca>.

2.3 Our Production Wells

The water system relies on four production wells for water supply, located at our Lynden and Autumn Well Fields at Lynden Street and Autumn Avenue, respectively. The production wells were constructed under CWD's Well Replacement Program (2010-2017) and have replaced aging well infrastructure. To ensure longevity and productivity of the wells, CWD implements a preventative well maintenance program with entails the routinely assessment, inspection, and cleaning of the wells.

There are two production wells at each well field:

- ◆ RW 3-93/11 – in operation since 2011 (Lynden Well Field).
- ◆ RW 7-00/13 – in operation since 2013 (Lynden Well Field).
- ◆ RW 1-87/14 – in operation since 2014 (Autumn Well Field).
- ◆ RW 2-63/17 – in operation since 2017 (Autumn Well Field).

The production wells are each equipped with a submersible pump and motor with a nominal discharge rate of 50 L/s. The wells operate in rotation (between well fields and wells). The combined yield of the production wells is sufficient to meet current and future water demand.

On July 29, 2025, the Ministry of Water, Land and Resource Stewardship issued the groundwater licences (withdrawal authorizations) for CWD's production wells.

Under the [Water Sustainability Act](#), non-domestic groundwater use is legally required to obtain a water licence, as regulated by the [Water Sustainability Regulation](#).

2.4 SCADA

The Supervisory Control and Data Acquisition (SCADA) system CWD has in place is integral to CWD's operation and monitoring of the water system and our natural asset (i.e.: the aquifer). Through SCADA, CWD has real-time access to pertinent operation and monitoring aspects of the water system. Monitoring includes continuous data recording of flow information, water levels in wells, reservoir levels, water system pressure, and water temperature (reservoirs and wells). SCADA data analysis, completed by our hydrogeologist, provides essential information of our supply and distribution system. Also, through SCADA, alarm features are enabled, and CWD's system operators are notified instantaneously (through their hand-held devices) in case there is a problem with the system's operation or in case of unauthorized access.

2.5 Emergency Response Planning

CWD has a comprehensive Emergency Response Plan in place, approved by FHA. Furthermore, at each pump house (Lynden and Autumn well fields), fully functioning emergency chlorinators are installed. These chlorinators are solely used in the event of a water quality related emergency. CWD is also equipped with emergency water supply provisions, which will enable us to set up temporary mobile water supply stations in the event of an emergency. The idea is that no one should have to walk more than 500 metres to get access to potable water in the event of water system failure due to a catastrophic event.



IMAGE | AUTUM WELL FIELD PUMP HOUSE.

2.6 Community Outreach

CWD organizes open houses on an annual basis, typically held during summer. CWD started with this event as an opportunity for our stakeholders to informally meet with CWD staff and Board Members, and to learn more about the water system and groundwater. At the same time, vendors and consultants CWD works with are invited showcase latest technology and educational material.

In 2025, for CWD organized the **Open House** in conjunction with the **Annual General Meeting**, held at the **Reservoir Site** (2889 Grandview Crescent) on June 20.



IMAGE | 2025 OPEN HOUSE – BARBEQUE , FOLLOWED BY THE AGM.

3. Water Supply Source Monitoring

3.1 Our Aquifer

The Government of BC documents two aquifers to the permeable layers beneath CWD's service area⁵. The Province of BC correlates CWD's production wells to Aquifer No. 28, the deeper aquifer underneath Aquifer No. 15. Aquifer No. 15, formerly referred to as Abbotsford-Sumas Aquifer, was renamed to Abbotsford Shallow. **Figure 2** shows the delineations of the aquifers.

General description of the aquifers:

Aquifer No. 15 - Sumas Drift sands and gravels - the Sumas Drift consists of glaciofluvial sands and gravels, ice contact deposits and till that were deposited during the final glacial advance of the Fraser Glaciation; the aquifer represents glaciofluvial outwash⁶. Classified as an unconfined aquifer, this system has a high vulnerability to contamination from surface activities.

Aquifer No. 28 – Fort Langley (or earlier) sand and gravel; there is interlayering of primarily till or clay with sand and gravel deposits. The aquifer is confined by overlying glaciolacustrine clays (in the south) and/or till (in the north), though it becomes unconfined in certain areas near the edge of the Abbotsford Upland (therefore classified as having a medium vulnerability)⁷.

⁵ iMapBC (<https://maps.gov.bc.ca/ess/hm/imap4m/>) / Wells & Aquifer Database (<https://apps.nrs.gov.bc.ca/gwells/>).

⁶ https://s3.ca-central-1.amazonaws.com/aquifer-docs/00000/AQ_00015_Aquifer_Mapping_Report.pdf.

⁷ Information source: https://s3.ca-central-1.amazonaws.com/aquifer-docs/00000/AQ_00028_Aquifer_Mapping_Report.pdf.

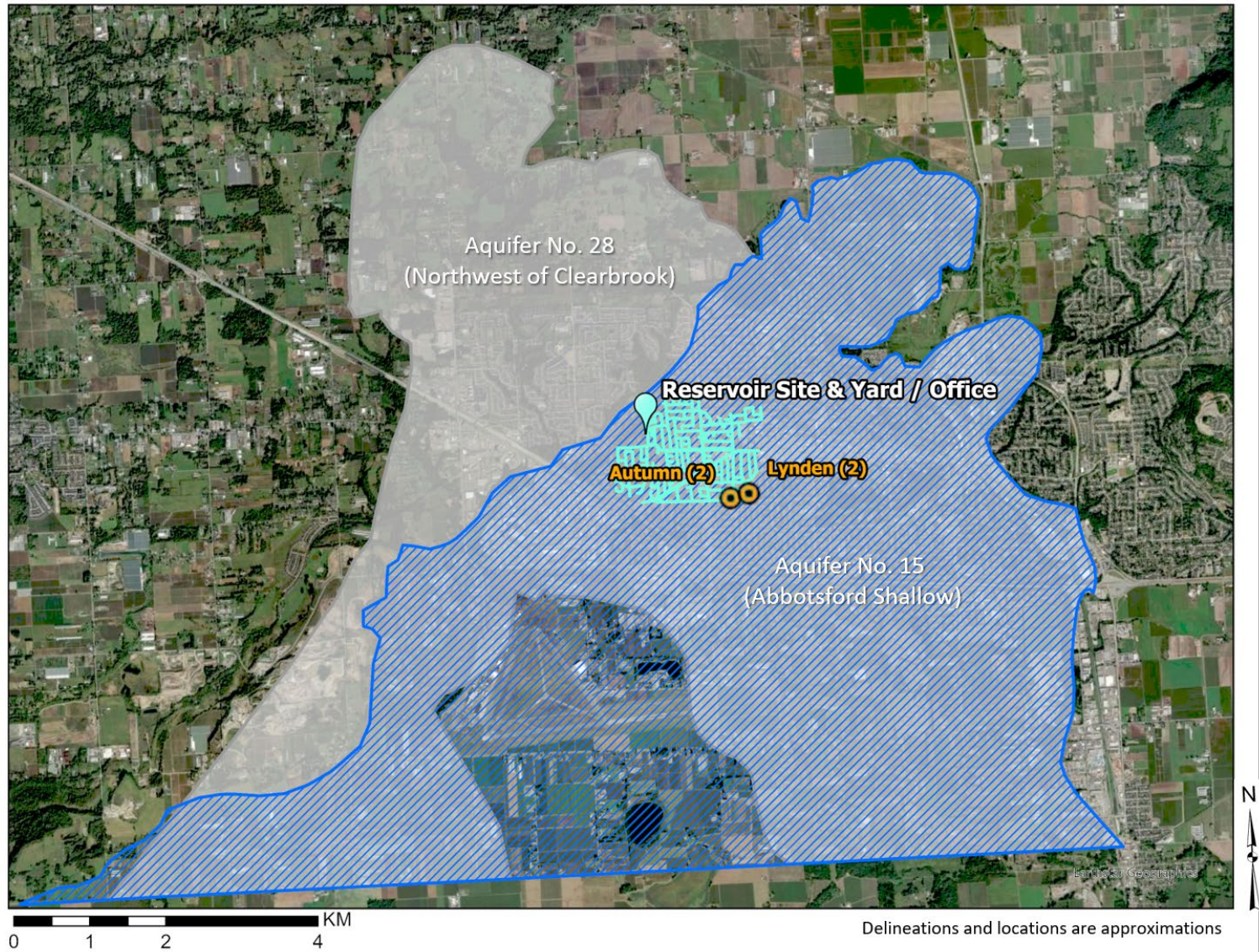


FIGURE 2 - DELINEATION OF AQUIFER NO. 15 AND AQUIFER NO. 28, AND THE LOCATION OF CWD'S WATER SYSTEM.

3.2 Groundwater Monitoring

CWD has a comprehensive wells and groundwater monitoring program in place for many years. Under this program, among other, collected data (recorded through SCADA) is analyzed to provide a meaningful interpretation of various data, some of which presented in this report.

2025 Groundwater Production (Withdrawals)

CWD's production wells have been operating in rotation throughout 2025. **Figure 3** shows the monthly groundwater production for 2025. The figure shows the monthly volumetric contribution of each production well. The total height of each bar reflects combined monthly groundwater production (volume), also indicated by the red circular markers. For comparison purposes, the figure also shows total monthly groundwater production volumes for 2024 (shown as white diamond-shaped markers). (The lines which connect markers in the figure have no meaning.)

Monthly production volumes exceeding 100,000 m³ occurred during the months July, August, and November. The higher-than-normal production in November is a result of prolonged overflowing of Reservoir B to manage water quality (microbiology).

2025 Groundwater Production and Related Information

◆ Annual total production (volume):	1,189,859 m ³ (1.2 BL).
◆ Average monthly production:	99,155 m ³ (99 ML).
◆ Average daily production:	3,260 m ³ (3.26 MLD).
◆ Average instantaneous discharge rate:	49.1 L/s (177 m ³ /hr).
◆ Combined annual hours of well operation:	6,736 hrs (18.5 hrs per day)
◆ Energy cost for water extracting water:	3.9 ¢ per m ³

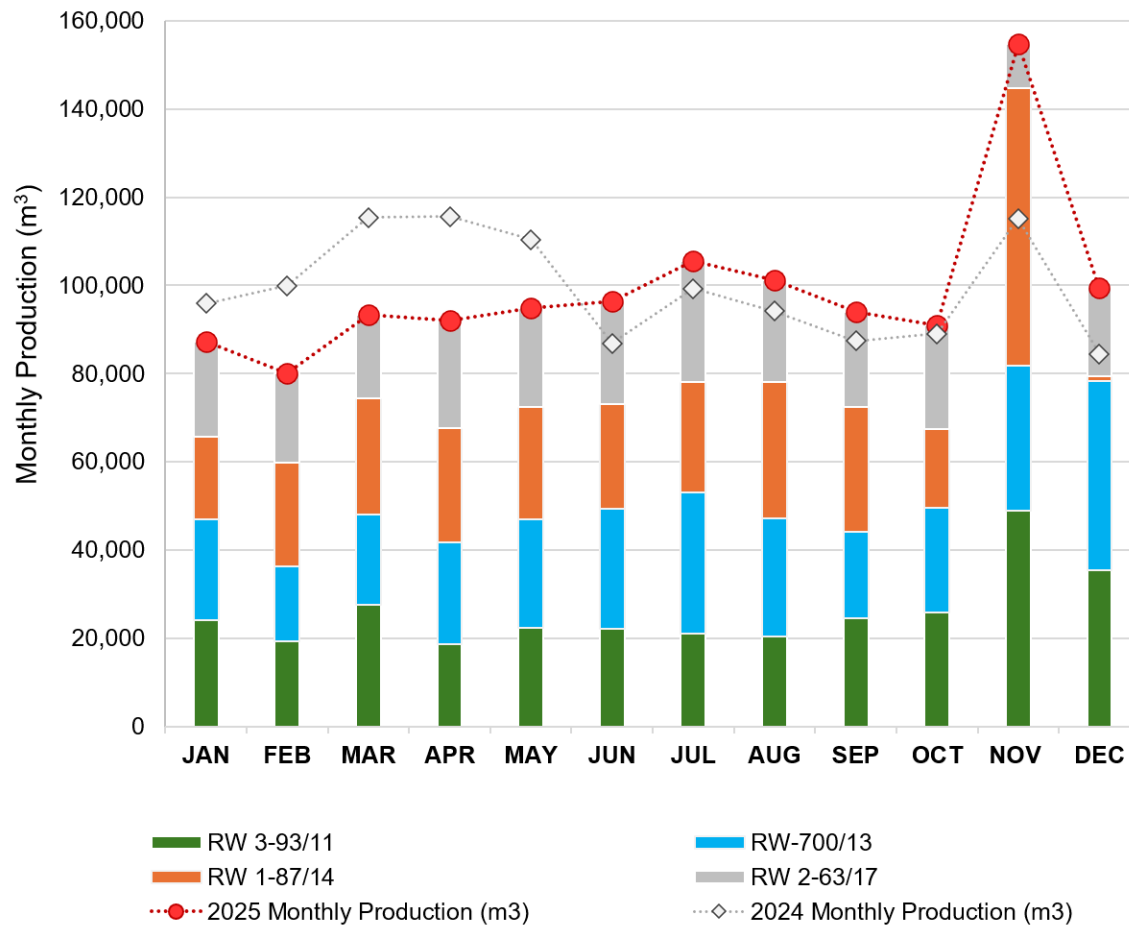


FIGURE 3 - MONTHLY GROUNDWATER PRODUCTION (2025); ALSO INCLUDED 2024 MONTHLY DATA. INCREASED PRODUCTION IN NOVEMBER IS DUE TO RESERVOIR OVERFLOW PRACTICES TO MAINTAIN WATER QUALITY.

Groundwater levels

CWD has a designated groundwater monitoring well, MW 6-59, at Lynden well field, connected to SCADA for continuous real-time recording of groundwater levels. The groundwater level (elevation) trend, shown in **Figure 4** (for years 2020 to 2025), provides valuable insight in the variation in groundwater levels seasonally, and between years, as observed at the designated monitoring well and representative for the local groundwater level. This is essential information for safeguarding the sustainability of the aquifer.

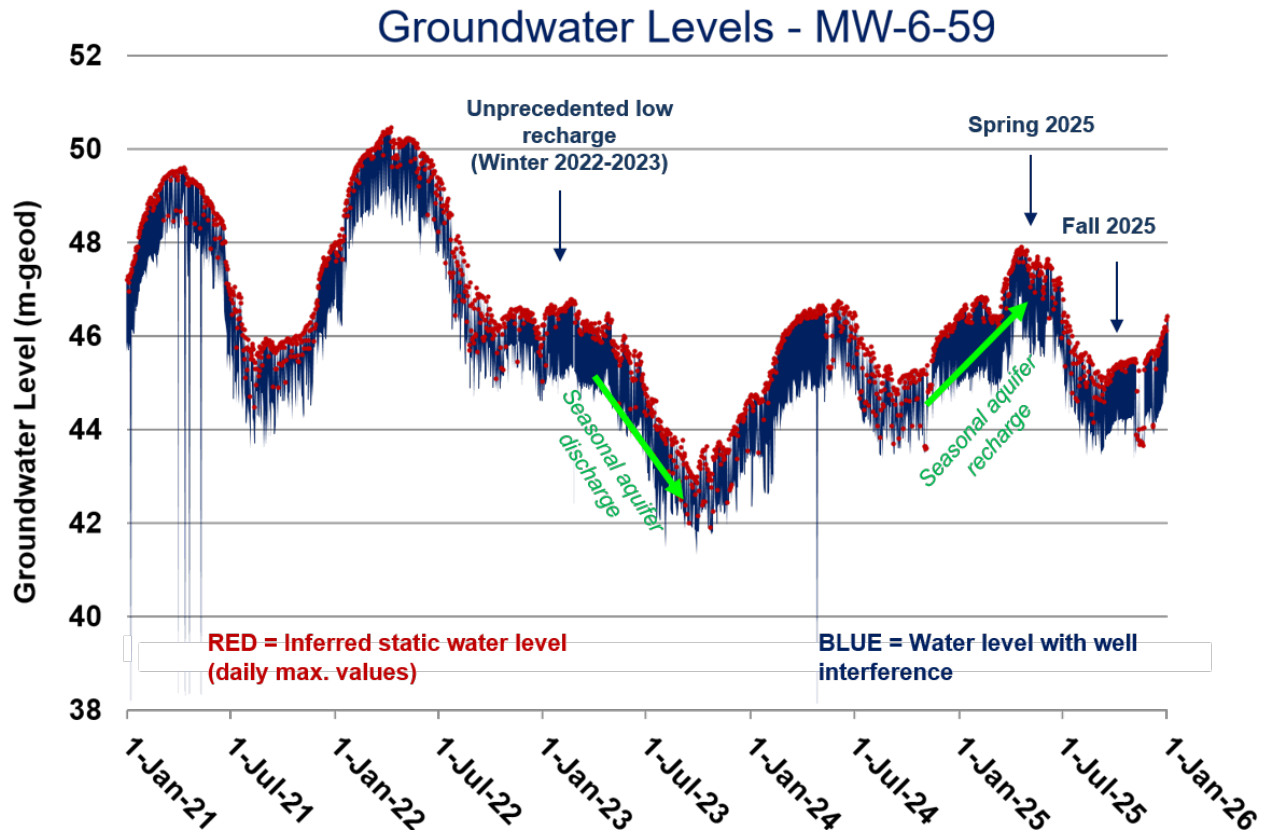


FIGURE 4 - GROUNDWATER LEVEL TRENDS OBSERVED AT CWD MW 6-59 (JAN. 1, 2021- JAN 1, 2026).

The sine-shaped data series illustrate seasonal variation in groundwater levels within a year and between years. The observed trend suggest:

- periods of (seasonal) **groundwater recharge** during which groundwater levels rise during **fall and spring** (of the following year), indicated by the upwards green arrow in the figure; and
- periods of seasonal groundwater level decline (**groundwater discharge**) which occurs every year from spring to fall, indicated by the downwards green arrow in the figure.

Throughout 2025, ambient groundwater levels generally stayed below historical lows. While recharge stagnated in early 2025, a positive trend emerged in mid-March, peaking on April 25. Summer discharge followed historical patterns initially but declined rapidly in July before stabilizing from August through fall, with consistent recharge beginning after September 17. Lower-than-average levels in November and briefly in December are attributed to continuous well operation during reservoir overflow practices, affecting MW 6-59 water level readings.

Water demand is typically the highest during the summer months (especially during periods of hot and dry weather conditions). Therefore, water conservation is essential to reduce the stress on the aquifer. CWD continues the close monitoring of the groundwater levels.



IMAGE | CWD DESIGNATED MONITORING WELL - MW 6-59.

4. Selected Work and Projects

4.1 Work and Projects completed in 2025

Water Quality Monitoring

This is an on-going activity and is addressed in **Section 5** ([Water Quality Assurance](#)) and **Section 6** ([Water Quality Review](#)).

Water System Maintenance

Water system maintenance is on-going throughout the year. The following is a list of selected maintenance work (and related tasks) completed in 2025:

General

- ✓ 160+ work orders were completed; 271 BC#1 calls were marked out; and 3 emergencies after hour callouts were responded to.
- ✓ 48-hour shutoff notices were hand-delivered throughout the year and services were cut off as required (124 in total).

Hydrants

- ✓ 240 fire hydrants and water system end points were flushed (spring and fall), including unidirectional flow method (in fall).
- ✓ Hydrant E114 was rebuilt.
- ✓ A new hydrant (E91) was installed by a contractor at the corner of Monte Vista and Sunnyside Crescent under CWD supervision.
- ✓ Removal of one fire hydrant at 32123 George Ferguson Way to allow the construction of a temporary road through the site during construction. Hydrant B35 will be reinstated in 2026.

Water meters

- ✓ Meter reading was completed quarterly (conventional meters).

Service lines

- ✓ 14 new 25.4 mm (1 inch) service lines were installed.
- ✓ A temporary 25.4 mm service was installed at 32123 George Ferguson Way; to be used during the construction of the new apartment building.

Water Main / Water line Repairs & Leak Detection

- ✓ Leaks were monitored throughout the year using Harmony.
- ✓ A Service line leak was repaired at 32375 Diamond Crescent.; a new service line was pulled from the main to the meter box.

Equipment Checks, Maintenance, Repairs, Winterizing

- ✓ Month end duties were completed at the end of each month. These duties include running the site backup generators, plus running all 4 of our mobile generators, checking all the vehicle fluid levels and checking tire pressure, plus reviewing a tool list specific to each vehicle. Any required maintenance is reported to arrange the required repairs.
- ✓ Equipment maintenance was completed in-house for all equipment (aside from the backhoe).
- ✓ Dump truck and valve exerciser inspections (completed by Inland Truck and Equipment).
- ✓ Repairs on the backhoe's extend-a-boom was completed.
- ✓ The annual inventory was completed in late December.
- ✓ Cleaning of the pump houses and work yard as needed throughout the year.
- ✓ Vehicle maintenance was completed as needed throughout the year. This includes actions completed inhouse by our field staff or at a service center if required.
- ✓ The water fountain at Spud Murphy Park was repaired.
- ✓ Water valves were exercised ahead of tie-ins to ensure that the water could be fully shut off during the work in the area.
- ✓ Landscaping was done around a few fire hydrants as required throughout the year.
- ✓ The stainless-steel standpipes at the wellfields were manually drained as well as hydrant C10 prior to the freezing temperatures; the drinking fountain at Spud Murphy Park is taken offline during the winter months.



IMAGE | WATER SYSTEM FLUSHING IN PROGRESS.

Reservoir Site, Pump Stations, and Well Fields (General)

- ✓ Fraser Valley Fire Protection tested all the fire alarms at all the sites, and inspected and replaced fire extinguishers as needed.
- ✓ Pump speed tests and well hydraulic performance tests were completed for all four production wells.
- ✓ All wells are monitored on possible sand production via a dedicated sand measuring device installed on the water manifold in the pump stations (i.e., no issues were observed).

Water Main Construction – Pipe Replacement Program (2025 Tendered Capital Project)

The replacement and upgrade along Clearbrook Road entailed:

- Replacement of 68 m of 150 mm (6 inch) asbestos cement (AC) pipe with 250 mm (10 inch) C909 pipe (Bionax® PVCO Pipe). This concluded the Phase 2 Royal Loop Project that started in 2023).

Daily inspections were completed by our field staff for this project. The service line for 3035 Clearbrook Road was replaced during this project by our field crew, moving the meter from the crawlspace under the building to a meter box outside at the property line. The sidewalk restoration for this project was also done by CWD's field crew alongside Herman Weibe (contractor).



IMAGE | WATER MAIN REPLACEMENT ALONG 2935 CLEARBROOK ROAD - 250-MM BIONAX® PIPE WAS INSTALLED (2025 TENDERED CAPITAL PROJECT).

Reservoir C Exterior Roof Sealing

Reservoir C external roof (dome) sealing was completed by CWD crew in summer 2025. Based on the monitoring of the effectiveness of the sealant, it was found that the leaking was not resolved. Reservoir C was placed offline permanently.



IMAGE | RESERVOIR C EXTERIOR ROOF SEALING – SANDING OF SELECTED SECTIONS OF THE ROOF (WHERE FILL WAS APPLIED) PRIOR TO COMPLETE ROOF SEALING.



IMAGE | RESERVOIR C EXTERIOR ROOF SEALING.

Work Pertaining to New Developments

- 15 Capital Expenditure Charges (CEC) were completed.
- 9 fire flow tests were completed for potential future developments.
- Review of proposed development design drawings throughout the year. All development drawings are approved by CWD's corporate administrator, Jason Hildebrandt, and Field Supervisor (James Wiens) before they can receive final approval.
- Completion of daily site inspections by James Wiens pertaining to water main (upgrade) installation work at 2491 Lynden Street. This project entailed replacing 25 meters of 150 mm AC pipe with 250 mm PVC pipe.
- Thorough flushing and disinfection are completed by the contractor for each new tie-in to the water system.

Developer upgrade for 2935 Clearbrook Road.

- Daily site inspections were done for the main water upgrade along Clearbrook Road by Marex Construction. This project saw 140 meters of 200mm AC pipe replaced with 250PVC pipe. A new hydrant was also installed as part of this project.

Advanced Metering Infrastructure (AMI) Replacement Program (2024 Capital Project)

- 166 water meters were replaced (bringing the total of replacements to 1151 AMI meters).
- In 2026, the remaining AMI meter replacement will be completed (estimated 234 meters).

Water System Map

The water system map was revised and updated by GeoAdvice Engineering Inc.



IMAGE | AC CUTOUT FOR SANITARY CROSSING AT 2491 LYNDEN STREET.

Groundwater Monitoring & Well Assessments

Pertinent information is recorded through SCADA pertaining to the operations of the wells, groundwater levels and temperature and reservoir operation. In addition to the automatic recording of data through SCADA, field staff completes daily pump checks and manual groundwater readings on a bi-weekly basis for selected monitoring well locations. CWD also monitors sand intake of the production wells by means of a sand tester connected to the water manifold.

Furthermore, under the guidance of KWD, various tests are completed on the production wells pertaining to well hydraulic performance and pump / motor performance. Step-drawdown pumping tests (for assessing well hydraulic performance) and pump speed tests (submersible pump / motor performance) were completed for all four production wells

These tests allow for a better understanding of changes in well and pumping system performance over time. This information is relevant to the timely scheduling of well maintenance (well rehabilitation) and replacement of the submersible pump and / or motor.

2025 results suggests that the pump-motor performance and well hydraulic performance are within acceptable parameters. Sand production of the wells is very low, meeting industry standard specifications.



IMAGE | WATER LEVELS ARE TAKEN BY CWD STAFF DURING WELL TESTING.

RW 2-63/17 Preventative Well Maintenance

CWD has a comprehensive well maintenance program in place which entails the implementation of preventative well rehabilitation every 4 to 5 years for each production well (on a rotational basis). During such well rehabilitation specific measures are employed to 'clean' the well of any accumulated materials (e.g., mineral deposits and biomass) which causes clogging of the well screen openings (slots) which may impact well performance. Goals of a consistent and timely implementation of the preventative well maintenance program are to ensure the wells' productivity and longevity.

In the week of October 27, 2025, the second preventative maintenance was completed for RW 2-63/17, located at Autumn Well Field. Fyfe Well & Water Services completed the work; KWD provided the project coordination and completed the reporting.

The well rehabilitation program included:

- ✓ Downhole video inspections before and after the preventative maintenance work
- ✓ Mechanical cleaning (brushing).
- ✓ Chemical rehabilitation (application of acid descaler).
- ✓ Flushing / removal of dissolved incrustations.
- ✓ Inspection of the pumping equipment.

All work has been implemented in accordance with applicable industry standards and best practices. The preventative maintenance for RW 2-63/17 was effective in removing most of the observed incrustations (mostly precipitated iron).



IMAGE | WELL PREVENTATIVE MAINTENANCE FOR RW 2-63/17 IN PROGRESS; FLUSHING IS CARRIED OUT TO REMOVE SEDIMENTS AND DISLODGED AND DISSOLVED INCRUSTATIONS (MOSTLY IRON SCALING) FOLLOWING THE APPLICATION OF ACID DESCALER.

4.2 Training

In 2025, field staff completed the following courses to stay current on knowledge and certification:

- ❖ James Wiens, Ryan Federau, Ryan Allen, and Keegan Royal completed and passed a two-day in-classroom Traffic Control Person course, organised by British Columbia Construction Safety Alliance (BCCSA).
- ❖ Ryan Allen completed his water distribution level two in-classroom course (BC Water and Waste Association) and passed his Level 2 exam.

Furthermore, Jason Hildebrandt, James Wiens, and Ryan Federau were invited on a tour of Logan Lake to discuss their yearly chlorination/flushing program.



**IMAGE | 2024 PIPE REPLACEMENT AND FIRE HYDRANT INSTALLATION
ALONG CONRAD AVENUE AND CARLA COURT.**

4.3 Scheduled Work for 2026

The following selected projects and activities are scheduled for 2026:

Flushing Program

- ❖ Regular flushing is scheduled for spring.
- ❖ Uni-Directional Flushing is scheduled in fall.

Reservoir Site

- ❖ Demolish Reservoir C and possible other works as needed to move the Reservoir C replacement project along; completion anticipated in 2027 (cost dependant).
- ❖ Install a new storm main.
- ❖ Move SCADA radio and antenna over to Reservoir B.

AMI Meter Replacement (Capital Project)

- ❖ Install the remaining AMI meters (about 200).

Water Main Installation Inspections

- ❖ Daily site inspection as required on any developer installed water mains within our district.

Fire Hydrant Maintenance

- ❖ 207 fire hydrant will be rebuilt.
- ❖ Repainting the fire hydrants and renumbering as required.

Service Lines

- ❖ Service upgrades as required throughout the year.
- ❖ Install new water service for Spud Murphy Park.
- ❖ Service transfers along Old Yale Road.

Water Quality Monitoring

- ❖ Routine water quality monitoring (microbiological, chemical / physical parameters) through the distribution system and at the source (production wells).
- ❖ PFAS sampling and analysis at our production wells.

Other Work (Selected)

- ❖ Equipment maintenance completed on all the equipment in January/February in addition to as needed throughout the year.
- ❖ Quarterly meter readings.
- ❖ Daily/weekly pump checks.
- ❖ Grounds/building maintenance as required.
- ❖ Pump speed tests and well step tests on all 4 production wells.
- ❖ Grounds work to our well sites and reservoir site, including placing 3-inch minus around the well heads.

5. Water Quality Assurance

5.1 Water Quality Monitoring

Providing safe, reliable, and clean water to our rate payers remains CWD's key responsibility. We take pride in providing drinking water of the highest quality at a reasonable cost, thereby meeting water demand, complying with provincial regulations, and working responsibly to protect our aquifer.

According to **Section 15 (b) of the Drinking Water Protection Act**, a water supplier must make available to the public the results of the water quality monitoring, and, **in accordance with Section 11 of the Drinking Water Protection Regulation**⁸, that this is done within 6 months of the end of the calendar year.

Routine Monitoring - Microbiology (Distribution, Storage, and Supply Source)

The Drinking Water Protection Regulation (DWPR) sets water quality standards for potable water (selected microbiological constituents in drinking water). The Drinking Water Act and Regulation are enforced for community water systems in British Columbia⁹. Schedule B of the DWPR establishes guidelines for water sampling frequency of microbiological parameters, and for water utilities serving a population of 5,000 to 90,000 people, 1 monthly sample per 1000 of population is required. In case of CWD, the minimum requirement would be 11 monthly samples (the estimated population is 10,671 people) and a total of 132 samples.

CWD routinely (weekly) monitors the water quality of our water supply and distribution system: CWD has 20 water sampling locations throughout the District, in addition to our four (4) production wells and one (1) reservoir, which, on a rotating basis, are sampled and analyzed for microbiological parameters: *Total Coliforms* and *E. coli*. Water samples are analyzed in-house as well as (mandatory) by the BC Centre of Disease Control (BCCDC).

The results of the 2025 microbiological water quality samples submitted to the BC Center for Disease Control (BCCDC) by Fraser Health are included as **Appendix C**:

- ✓ Routinely, **209 water samples** were analyzed through the distribution system, with 196 samples from designated sample stations and 13 samples from Reservoir B. Results suggest that of the 209 samples, 2.39% of the samples contained total coliform (i.e., 5 instances of a total coliform count of 1), with no occurrences of repeat positive count for those sample location. The 209 water samples show 100% absence of *E.coli*.
- ✓ On a monthly basis water samples were analyzed from the source (production wells), with one sampling missed in March 2025. Based on 11 analyzed samples, CWD's groundwater sources shows 100% absence of the microbiological indicators. This suggests that raw groundwater meets the DWPR.

⁸ http://www.bclaws.ca/civix/document/id/loo71/loo71/10_200_2003

⁹ Environmental health officers routinely inspect, sample, and assess community water systems for compliance with the Drinking Water Protection Act and Regulation (www.fraserhealth.ca).

Water Chemistry

Furthermore, on July 25 and December 17, 2025, CWD collected water samples from the source (i.e.: the production wells), from Reservoir B and two sample stations in the District. The water samples were submitted to an accredited water testing laboratory (Element, Surrey, BC) for potability analysis (**Section 6.1**).

Biological Activity Reaction Tests (BART)

In April and May water samples were collected for BART. BART is an industry accepted method for determining the presence of so-called nuisance bacteria (i.e., there is no health concern associated with the detection of such bacteria). BART results are presented in **Section 6.2**.

pH Monitoring

CWD has installed pH meters connected to the water manifold which allows for continuous monitoring. The pH meters were assembled, installed, and calibrated by CWD's Water Quality Technician.

Pharmaceuticals and Personal Care Products (PPCPs)

Pharmaceuticals and personal care products (PPCPs) refer to a: *"diverse group of chemicals that include all drugs (both prescription and over-the-counter medications) and non-medicinal consumer chemicals, such as the fragrances (musks) in lotions and soaps and the ultraviolet filters in sunscreens"* (US EPA, 2013; 1st page). One round of testing for PPCPs was completed for RW 3-93/11 by an accredited water testing laboratory (SGS Axys, Sidney, BC). Health Canada has not set standards for PPCPs. All analyzed constituents were found to be below nominal detection limits.

Upon request, rate payers can receive a copy of the 2025 results.

PFAS

In 2025, CWD started with the monitoring of Per-and Polyfluoroalkyl Substance (PFAS) constituents. PFAS are a group of thousands of human-made chemicals, known as 'forever chemicals', remaining in groundwater and are difficult to remediate. It concerns chemicals that are used as surfactants, lubricants and repellents for dirt, water, and grease in a wide range of products. Examples are fire cleaning products, coatings (e.g., in non-stick pans), food packaging material, cosmetics, pesticides, textiles, and cleaning products.

The (interim) objective of 30 ng/L (for sum for 25 specific PFAS compounds), established by Health Canada (2024) is based on a precautionary approach (*the set objective is not a maximum acceptable concentration*) and on concentrations that can be reliably measured by available methods and achieved by drinking water treatment. Furthermore, Health Canada recommends that PFAS concentrations in drinking water be maintained as low as reasonably achievable (ALARA) (Health Canada, 2024).

One round of water samples was collected from RW 3-93/11 and RW 1-87/14 and submitted for analysis by an accredited water testing laboratory (Pacific Rim Laboratory Inc., Surrey, BC). Results

from the lab were 46 ng/L (RW 3-93/11) and 14 ng/L (RW 1-87/14) for the sum of 25 specific PFAS compounds. The results report, prepared by Pacific Rim Laboratory Inc. are included in **Appendix D**.

To proactively build a comprehensive understanding of PFAS at our source (production wells), CWD is implementing a PFAS monitoring program in 2026 for all production wells in consultation with Fraser Health. This multi-sample initiative will establish robust baseline metrics to help guide any future decision-making.

Testing for PFAS is voluntary and is not yet required by health authorities. Below are some of the available resources pertaining to PFAS:

Health Canada Water Talk:

<https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/water-talk-per-polyfluoroalkyl-substances-drinking-water.html>

Health Link BC:

<https://www.healthlinkbc.ca/healthlinkbc-files/pfas-drinking-water>



IMAGE | IN ADDITION TO WATER TESTING – IN HOUSE MICRO BIOLOGICAL ANALYSIS, WEEKLY COMPLETED BY THE WATER QUALITY TECHNICIAN, IN ADDITION TO WEEKLY WATER SAMPLES SUBMITTED TO THE BCCDC.

5.2 Water Quality Technician's Report 2025

2025 proved to be yet again, another interesting year with regards to water quality, with several standout items, on top of the routine workload.

Several portions of watermain were upgraded in 2025, with roughly 230 meters on Clearbrook Road near George Ferguson Way, and approximately 26 meters replaced on Pineview Avenue at Lynden Street. All of this work was performed by third party contractors under supervision of CWD field staff. All watermain upgrade projects (whether third party, or in house) are subject to the requirements laid out in AWWA C651 (Disinfecting Water Mains) prior to connection with the CWD water system.

Q1 BART testing took place in April and was within parameters that we expected to see. Q4 BART testing was not done, due to an ongoing Reservoir B issue at the time, which is outlined later in this report.

Weekly sampling in 2025 was performed for Fraser Health, for which 220 samples were submitted to the BCCDC. Samples collected for In House testing amounted to 345 samples processed in our Water Quality lab.

As a response to the E Coli issue (1 positive count) found in Reservoir C in 2024, August saw CWD staff undertaking the work to clean the roof, grind and caulk any visible cracks, and apply an NSF-61 (certified for potable water use) coating. After completion of the roof repair, we cleaned and pressure washed the floor of the reservoir and waited for rain to test the impermeability of the roof. After several days of rain, CWD staff entered the reservoir and found that the roof was still leaking. It was decided shortly thereafter that CWD would push up the replacement of this reservoir; demolition of the existing reservoir and subsequent construction will begin in the near future.

CWD tested one of our wells for PPCP (Pharmaceutical and Personal Care Products) in 2025, and of the extensive list of chemicals CWD tested negative for all of them. CWD also completed PFAS testing for two of the wells with results confirming detection of PFAS in groundwater.

Flushing started in the fall of 2025 but was pushed off to deal with the Reservoir B total coliform issue, which in itself utilized quite a bit of overflow and localized flushing.

In early November, we started to detect several low-level Total Coliform results in the system. As per our standard operating procedures, we performed targeted flushing and resampling. At around that same time we received some higher-level Total Coliform results (9 TC) in Reservoir B. We immediately put the reservoir into overflow and continued to sample it over the next week.

Despite our overflow, we were unable to clear the total coliform. Given the events that took place in late 2024 (E Coli in the reservoir and a subsequent boil water advisory while also chlorinating the distribution system) we opted to take decisive action. CWD staff devised a plan that would enable us to chlorinate the reservoir in such a way as to A) Permit sufficient chlorine concentration/contact time, and B) Prevent the heavily chlorinated water from entering the distribution system. On November 18th, CWD staff injected 160L of 12.5% Sodium Hypochlorite solution into the reservoir, which we had drained down to 70% capacity (roughly 2949 m³). This would give us a concentration of 7.5mg/L. We then aggressively pushed the reservoir into overflow utilizing 2 wells, pumping 160 m³/hr and 170 m³/hr, respectively. Overflow level was reached at 9:00 PM on November 18th, and free chlorine was measured at over 5 mg/L (the highest our colorimeter could read) and below 50 mg/L (using chlorine

colour test strips). Free chlorine levels were monitored over the next several days, and at 11:28 AM on Saturday the 22nd, we achieved a non-detectable free chlorine result. Total coliform samples from the previous 2 days also came back negative. The reservoir was returned to service at this time.

One week later (on December 5th) we started to see low level total coliforms in the reservoir once more, and after sampling throughout the system, including Well RW 2-63/17, made the determination that the total coliform seemed to be coming from this well. Well RW 2-63/17 had undergone rehabilitation work and was returned to service on November 4th, after passing bacteriological sampling. This well was shock chlorinated once more on December 16th, and after 2 consecutive clear bacteriological samples, was returned to service. The remainder of samples taken in 2025 were clear.

In early January 2026, after sampling every point in the system, we encountered the odd 1 or 2 TC count at various dead ends (mostly Palm Cres and Victoria Crt) that were resolved with targeted flushing. This was likely left over bacteria from the RW 2-63/17 – Reservoir B situation from late 2025 that had not settled out to any sampling points. At the time of this writing (late February), the issue has been resolved.

Given CWD's entry in the 2025 Berkeley Springs International Water Tasting Competition failed to place, it was decided to sit out 2026 and revisit the possibility of entering again in 2027.

I look forward to being a part of the upcoming reservoir planning and construction program in 2026-2027, and the unique challenges and work that is sure to be encountered.

Ryan Federau, CWP

WDSO II

Water Quality

Clearbrook Waterworks District



IMAGE | WATER SAMPLES COLLECTED DURING WEEKLY SAMPLING FOR IN-HOUSE MICROBIOLOGICAL ANALYSIS; THIS IS IN ADDITIONAL TO THE WEEKLY SAMPLING SUBMITTED TO THE BCCDC.

6. Water Quality Review

6.1 Water Quality Review

Water samples were collected by CWD from the **supply source** (production wells RW 3-93/11, RW 7-00/13, RW 1-87/14, RW 2-63/17), and Reservoir B¹⁰ on July 25, 2025, and December 17, 2025. RW 1-87/14 was not sampled in December because the well was offline due to maintenance requirements to the variable frequency drive (which was resolved early 2026). Furthermore, water samples were collected from three sample stations in the district (2464 Sunnyside Place, 2425 Lynden Street, and 32350 Diamond Crescent). The water samples were analyzed by Element, an accredited laboratory located in Surrey B.C. **Table 1** (on *Pages 34-35*) summarizes the results of the water quality analysis, which are evaluated towards the most recent edition of the Canadian Drinking Water Guidelines (Health Canada, 2025). Water quality analysis includes physical, chemical, and microbiological parameters. The reports prepared by Element are included as **Appendix D** (July results) and **Appendix E** (December results).

Results of the water analysis for the four replacement wells, reservoir and two sample stations suggest that the water quality meets the Canadian Drinking Water Guidelines requirements in terms of Maximum Acceptable Concentrations (MAC) and Aesthetic Objective (AO), with exception of:

- ✓ Manganese concentration of 0.068 mg/L was reported for the water samples collected from **RW 1-87/14**, on July 25: concentrations value exceeds the AO of 0.02 mg/L - *historically, RW 1-87/14 shows a tendency towards elevated manganese concentration but has always been below MAC.*

The Canadian Drinking Water Guidelines Summary Table, available at <https://www.canada.ca>, provides information for the various analyzed water quality parameters pertaining to guideline limits, common sources (of the parameter), and health considerations.

Based on the reported results for the **production wells**:

- ✓ pH values range between 6.74 (**RW 7-00/13**) to 7.62 (**RW 1-87/14**) which suggests that the sampled water range from acidic (pH < 7.0) to basic (pH > 7.0). Some pH values may skew higher due to the extremely short holding time (so some results are likely impacted by the exceeding of the holding time).
- ✓ Water hardness (as CaCO₃)¹¹ ranges from 81 mg/L (**RW 7-00/13**) to 123 mg/L (**RW 3-93/11**) and suggests moderately hard to hard water at all four production wells (Moderately hard water ranges from 60 mg/L to less than 120 mg/L; hard water ranges from 120 mg/L to less than 180 mg/L).
- ✓ Turbidity values range from 0.19 NTU (**RW 3-93/11**) to 0.73 NTU (**RW 2-63/17**).

Regarding turbidity: Health Canada has set water treatment limits regarding turbidity (not applicable to CWD's water system). Even so, for good operation of the distribution system, it is recommended

¹⁰ Water samples were collected and submitted to Element by Ryan Federau (CWD Water Quality Technician).

¹¹ Hardness is evaluated based on the concentration of calcium carbonate (CaCO₃), because calcium (Ca²⁺) and carbonate (CO₃²⁻) are the dominant ions in most hard waters.

(for systems that use groundwater) that the water entering the distribution system has turbidity levels of 1.0 NTU or less (Health Canada, 2025).



IMAGE | WATER FROM OUR SUPPLY SOURCE (RW 7-00/13).

Summary

- ◆ Based on the results of the water quality analysis and in accordance with the Drinking Water Protection Regulation, CWD's drinking water is safe and does not require any treatment.
- ◆ Based on the evaluation of hardness, CWD'S drinking water does not require any water softeners.

Contact CWD office for any questions regarding the quality of our drinking water.

Table 1 Water Quality Results

Analyte	Units	Guideline Limit	Guideline Type	Analysis						
				Raw water (Matrix: Drinking Water)						
Sample Description				RW 1-87/14	RW 2-63/17	RW3-93/11	RW 7-00/13	Reservoir B	2425 Lynden St	2464 Sunnyside Pl.
Sample date				2025-07-25	2025-07-25	2025-07-25	2025-07-25	2025-07-25	2025-07-25	2025-07-25
Sample time				9:32 AM	10:01 AM	10:25 AM	10:40 AM	11:10 AM	9:45 AM	11:00 AM
Lot ID (Element)				1831433	1831433	1831433	1831433	1831433	1831433	1831433
Report number				3162641	3162641	3162641	3162641	3162641	3162641	3162641
Report date				2025-08-18	2025-07-30	2025-08-18	2025-07-30	2025-07-30	2025-07-30	2025-07-30
Ref. number				10063566	10063568	10063569	10063570	10063571	10063567	10063572
Metals Extractable										
Aluminum	mg/L	0.1	OG	<0.001	0.001	<0.001	<0.001	0.002	<0.001	0.001
Antimony	mg/L	0.006	MAC	0.00010	0.00008	0.00004	0.00003	0.00006	0.00004	0.00006
Arsenic	mg/L	0.010	MAC	0.0018	0.0008	0.0005	0.0004	0.0007	0.0004	0.0008
Barium	mg/L	1	MAC	0.0270	0.011	0.010	0.007	0.014	0.0075	0.014
Boron	mg/L	5	MAC	0.032	0.019	0.015	0.011	0.020	0.013	0.018
Cadmium	mg/L	0.005	MAC	0.00002	0.00002	0.00004	0.00003	0.00002	0.00003	0.00001
Chromium	mg/L	0.05	MAC	0.00097	0.00008	0.00016	0.00018	0.00015	0.00014	0.00015
Copper	mg/L	1 AO; 2 MAC		<0.0005	<0.0005	0.0013	0.0017	<0.0005	0.0061	0.0044
Lead	mg/L	0.01	MAC	0.00016	<0.00001	0.00015	0.00021	<0.00001	0.00051	0.00053
Selenium	mg/L	0.05	MAC	0.0003	0.0008	0.0004	0.0002	0.0003	0.0002	0.0003
Strontium	mg/L	7.0	MAC	0.11	0.08	0.160	0.13	0.13	0.13	0.13
Uranium	mg/L	0.02	MAC	0.00023	0.00006	0.00007	0.00003	0.00010	0.00002	0.00008
Vanadium	mg/L			0.00043	0.00033	0.00041	0.00043	0.00047	0.00037	0.00046
Zinc	mg/L	5.0	AO	0.001	0.0009	0.0190	0.0120	0.001	0.014	0.0160
Physical and Aggregate Properties										
Colour	Colour units	15	AO	<5	<5	<5	<5	<5	<5	<5
Turbidity	NTU	0.1	OG	0.21	0.25	0.19	0.19	0.60	0.17	0.3
Routine Water										
pH	-	7.0-10.5		7.62	7.24	7.12	7.20	7.47	7.17	7.44
Electrical Conductivity	µS/cm at 25 °C			327	232	365	279	305	278	300
Calcium	mg/L			28	25	37	23	25	23	27
Iron	mg/L	0.1	AO	0.01	0.006	<0.004	<0.004	0.016	<0.004	0.004
Magnesium	mg/L			7.3	6.4	8.9	5.6	6.1	5.5	6.3
Manganese	mg/L	0.02 AO; 0.12 MAC		0.064	0.006	<0.001	<0.001	0.002	<0.001	<0.001
Potassium	mg/L			2.3	1.6	1.8	1.2	1.5	1.2	1.6
Silicon	mg/L			9	9.0	10.0	10.0	9.8	10	9.8
Sodium	mg/L	200	AO	16	9	14.0	9	11	9.0	11
T-Alkalinity	mg/L			102	62	59	38	63	38	58
Chloride	mg/L	250	AO	20.1	15.8	64.8	44.2	37.2	43.9	38.2
Fluoride	mg/L	1.5	MAC	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrate - N	mg/L	10	MAC	0.62	1.42	1.98	2.39	1.72	2.39	1.86
Nitrite - N	mg/L	1	MAC	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate	mg/L	500	AO	23.3	20.9	19.8	14.3	18.4	14.4	17.6
Hardness	mg/L			99	89	130	81	88	79	92
Total Dissolved Solids	mg/L	500	AO	184	146	218	159	171	158	171
Microbiology										
Total Coliform	MPN/ 100 mL	0 per 100 mL	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Escherichia coli	MPN/ 100 mL		MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Heterotrophic Count	MPN / mL	-		<2.0	<2.0	4.0	4.0	2	10	2.0

MAC = Maximum Acceptable Concentration; AO = Aesthetic Objective; OG = Operator Guideline for Water Treatment Plants

Orange = Exceeding AO

Green - Exceeding OG

mg/L = milligrams per litre

MPN = Most Probable Number

Table 1 Water Quality Results, Continued.

Analyte	Units	Guideline Limit	Guideline Type	Analysis					
				Raw water (Matrix: Drinking Water)					
Sample Description				RW 2-63/17	RW 3-93/11	RW 7-00/13	Reservoir B	2464 Sunnyside Pl.	32350 Diamond Cres.
Sample date				2025-12-17	2025-12-18	2025-12-18	2025-12-18	2025-12-18	2025-12-18
Sample time				12:17 PM	9:38 AM	9:26 AM	9:08 AM	8:53 AM	8:40 AM
Lot ID (Element)				1866628	1866628	1866628	1866628	1866628	1866628
Report number				3223935	3223935	3223935	3223935	3223935	3223935
Report date				2025-12-22	2025-12-22	2025-12-22	2025-12-22	2025-12-22	2025-12-22
Ref. number				10380616	10380617	10380618	10380619	10380620	10380621
Metals Extractable									
Aluminum	mg/L	0.1	OG	0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Antimony	mg/L	0.006	MAC	0.00008	0.00004	0.00003	0.00004	0.00003	0.00003
Arsenic	mg/L	0.010	MAC	0.0011	0.0004	0.0004	0.0005	0.0005	0.0005
Barium	mg/L	1	MAC	0.0120	0.0084	0.007	0.011	0.012	0.011
Boron	mg/L	5	MAC	0.020	0.014	0.011	0.015	0.015	0.012
Cadmium	mg/L	0.005	MAC	0.00002	0.00004	0.00003	0.00002	0.00002	0.00001
Chromium	mg/L	0.05	MAC	0.00039	0.00013	0.0002	0.00013	0.00014	0.00017
Copper	mg/L	1 AO; 2 MAC		<0.0005	0.0011	0.0018	0.026	0.0053	0.0035
Lead	mg/L	0.01	MAC	<0.00001	0.00010	0.00019	0.00004	0.00034	0.00034
Selenium	mg/L	0.05	MAC	0.0007	0.0005	<0.0002	0.0004	0.0004	0.0003
Strontium	mg/L	7.0	MAC	0.09	0.15	0.12	0.140	0.16	0.12
Uranium	mg/L	0.02	MAC	0.00009	0.00008	0.00002	0.00007	0.00007	0.00003
Vanadium	mg/L			0.00055	0.00048	0.00053	0.00048	0.00046	0.00045
Zinc	mg/L	5.0	AO	0.004	0.017	0.014	0.0040	0.0150	0.010
Physical and Aggregate Properties									
Colour	Colour units	15	AO	<5	<5	<5	<5	<5	<5
Turbidity	NTU	0.1	OG	0.73	0.23	0.22	0.23	0.24	0.23
Routine Water									
pH	-	7.0-10.5		7.17	6.88	6.74	6.86	6.84	6.85
Electrical Conductivity	µS/cm at 25 °C			260	376	276	337	380	320
Calcium	mg/L			27	35	27	34	38	33
Iron	mg/L	0.1	AO	0.037	<0.004	<0.004	0.006	0.019	0.011
Magnesium	mg/L			6.9	8.6	6.7	8.3	9.2	7.2
Manganese	mg/L	0.02 AO; 0.12 MAC		0.014	<0.001	<0.001	<0.001	<0.001	<0.001
Potassium	mg/L			2.1	2.2	1.7	2.2	2.0	2.0
Silicon	mg/L			8	8	9.4	9.3	9.2	9.5
Sodium	mg/L	200	AO	11	14.0	11	13.0	15	12
T-Alkalinity	mg/L			72	55	40	55	56	47
Chloride	mg/L	250	AO	17.2	60.7	42.8	50.9	60.8	50.8
Fluoride	mg/L	1.5	MAC	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrate - N	mg/L	10	MAC	1.29	1.91	2.53	1.99	1.88	2.49
Nitrite - N	mg/L	1	MAC	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate	mg/L	500	AO	22.7	20.1	13.5	18.6	20.2	15.0
Hardness	mg/L			95	123	96	120	132	113
Total Dissolved Solids	mg/L	500	AO	159	205	164	195	212	185
Microbiology									
Total Coliform	MPN/ 100 mL	0 per 100 mL	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Escherichia coli	MPN/ 100 mL		MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Heterotrophic Count	MPN / mL	-		2	<2.0	2	48.0	4.0	8

MAC = Maximum Acceptable Concentration; AO = Aesthetic Objective; OG = Operator Guideline for Water Treatment Plants

Orange = Exceeding AO

Grey = Outside Range (pH)

Green = Exceeding OG

mg/L = milligrams per litre

MPN = Most Probable Number

6.2 Biological Activity Reaction Test

BART is a method for analyzing several bacterial communities that can cause problems for water quality (e.g.: turbidity), aesthetics (e.g.: odour, discoloration, cloudiness) and water infrastructure (e.g.: corrosion). The following bacterial communities were analyzed this year for each production well:

- **Iron Related Bacteria (IRB)**
- **Sulphate Reducing Bacteria (SRB)**
- **Slime Forming Bacteria (SLYM)**
- **Heterotrophic Aerobic Bacteria (HAB).**

These four indicators are typically used for water supply wells to obtain insight into corrosion risk and/or well screen clogging risk (a quantitative diagnostic). High aggressivity of these bacteria could also suggest masking of coliform bacteria¹².

Preparing the testers (vials) for BART started in April 2025, and daily observations are made for 9 consecutive days. BART was not completed in fall. **Table 2** summarizes the results using color coding in terms of level of aggressivity of evaluated bacteria for each well: *in the well* (time t = 1 min of pumping), *just outside the well screen* (t = 10 min of pumping), and in the *geological formation* (t = 60 min of pumping). We included orange color coding to reflect the borderline between medium and high aggressivity (applicable for IRB).

BART analysis shows that reactions occurred for **IRB** and **HAB**. No reactions were observed for **SLYM**, and (moderate) **SRB** reaction was only observed for RW 2-63/17. Typically, **IRB** was found to be ranging from moderate to high aggressivity; **RW 1-87/14** only showed moderate **IRB** aggressivity for all three sample locations. **HAB** was found to be low and moderate in aggressivity.

Overall, and historically, IRB and HAB are the most common bacteria (microbes) identified during the tests; IRB is typically found in the range borderline to high aggressivity. Generally speaking, microbes are ever present in a well environment, and based on our long-term implementation of BART, the degree of aggressivity of the various bacterial communities varies over time for each of the wells.

BART results in combination with well hydraulic performance data and the interior condition of the well and well screen (i.e.: degree of plugging), observed during the completion of a downhole video inspections, determine well rehabilitation requirements (timing and approach).

¹² <http://www.dbi.ca/BARTs/App-Guide.html>.

Table 2 - BART Results (2025)

Tester	Spring 2025			Fall 2025		
	Well	Outside well screen	Formation	Well	Outside well screen	Formation
	(t = 1 min)	(t = 10 min)	(t = 60 min)	(t = 1 min)	(t = 10 min)	(t = 60 min)
Bacterial communities	RW 3-93/11 - Sample Date: April 22, 2025			RW 3-93/11		
IRB						
SRB	no reaction	no reaction	no reaction			
SLYM	no reaction	no reaction	no reaction			
HAB						
Bacterial communities	RW 7-00/13 - Sample Date: April 22, 2025			RW 7-00/13		
IRB						
SRB	no reaction	no reaction	no reaction			
SLYM	no reaction	no reaction	no reaction			
HAB						
Bacterial communities	RW 1-87/14 - Sample Date: April 29, 2025			RW 1-87/14		
IRB						
SRB	no reaction	no reaction	no reaction			
SLYM	no reaction	no reaction	no reaction			
HAB						
Bacterial communities	RW 2-63/17 - Sample Date: April 29, 2025			RW 2-63/17		
IRB						
SRB						
SLYM	no reaction	no reaction	no reaction			
HAB						

Key:

	High aggressive
	Borderline moderate- high aggressive
	Moderate aggressive
	Low aggressive
-	No reaction

7. Reference

Health Canada (2024) *Objective for Canadian drinking water quality: Per- and polyfluoroalkyl substances* (Catalogue No. H144-132/2024E-PDF) [PDF]. Ottawa, ON: Health Canada, <https://www.canada.ca/content/dam/hc-sc/documents/services/publications/healthy-living/objective-drinking-water-quality-per-polyfluoroalkyl-substances/objective-for-canadian-drinking-water-quality-en-final.pdf>

Health Canada (2025) Guidelines for Canadian Drinking Water Quality. Summary table. Drinking Water Guidelines. Prepared by the Federal-Provincial-Territorial Committee on Drinking Water of the Federal-Provincial-Territorial Committee on Health and the Environment. Available at <http://www.hc-sc.gc.ca> (most recent update of on-line version: March 2025).

U.S. EPA. (2013) Contaminants of emerging concern (CECs) in fish: Pharmaceuticals and personal care products (PPCPs). Washington, DC: EPA-820-F-13-004. <https://www.epa.gov/sites/default/files/2018-11/documents/cecsppcps-factsheet.pdf>.

Appendices

Appendix A

Metals in Drinking Water “Flush” Message from Fraser Health Authority

February 4, 2026

Water System Operators

Re: Metals in Drinking Water – “Flush” Message in Annual Reports

Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until you notice a change in temperature. *(This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer.)* The more time water has been sitting in your home's pipes, the more lead it may contain.

Use only water from the cold tap for drinking, cooking, and especially making baby formula. Hot water is likely to contain higher levels of lead.

The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

Conserving water is still important. Rather than just running the water down the drain you could use the water for things such as watering your plants.

If you have any questions, please contact our Drinking Water Program at 604-870-7903 or 604-870-7900.

Sincerely,

Emily McGuire
Manager, Drinking Water Program
Fraser Health Authority
HPLand@fraserhealth.ca

Appendix B

Preventing Water-Borne Infections for People with Weakened Immune Systems (HealthLinkBC)

Preventing water-borne infections for people with weakened immune systems

Who is at higher risk from water-borne infections?

People with very weak immune systems who are at higher risk of certain water-borne diseases include those with:

- HIV infection who have a CD4+ count of less than 100 cells/mm³;
- lymphoma or leukemia (hematological malignancies) who are being actively treated or have been in remission and off treatment for less than 1 year;
- hematopoietic stem cell transplant recipients; and
- people born with diseases that severely affect their immune systems.

Some people with weakened immune systems, such as those with certain types of cancers or taking certain medications, may not be at higher risk of severe water-borne diseases. These people do not need to take extra precautions with their drinking water.

Ask your doctor or nurse practitioner how weak your immune system is, and whether you need to take extra precautions.

How can drinking water become contaminated?

Drinking water can contain different organisms, including bacteria, viruses and parasites, which can cause disease. These organisms can exist in the source water, such as lake water, and survive through treatment, or they can enter the water supply in the distribution system.

Well water can be contaminated if the well is located or constructed in a way that the groundwater it draws from is at risk of

containing pathogens (germs) such as a shallow well or a well drilled in fractured rock.

Surface water, such as rivers, lakes and streams, can also contain disease-causing organisms from animal feces.

If you have a weak immune system, you should not drink water from surface sources or groundwater at risk of containing pathogens, unless the water has been treated to remove or inactivate at least 99.9 per cent of parasites (protozoa), 99.99 per cent of viruses and all harmful bacteria.

Most community water systems in B.C. have effective treatment, such as disinfection or chlorination, against bacteria and viruses. However, in many cases, treatment may not provide a 99.9 per cent reduction in infectious parasites. Some water systems and many private supplies have no treatment at all. If the water you drink has not been disinfected, please refer to [HealthLinkBC File #49b Disinfecting drinking water](#).

How can I further treat disinfected water?

People with very weak immune systems should consult with their doctor or nurse practitioner and may need to take extra precautions with their drinking water.

Boiling: If your water supply has already been disinfected, bring the water to a full boil to inactivate any *Cryptosporidium* parasites - a major concern for people with weakened immune systems. For more information, see [HealthLinkBC File #48 Cryptosporidium infection](#).

If the water has not already been disinfected, bring the water to a full boil for at least 1 minute. This will kill or inactivate bacteria, viruses and parasites. At elevations over 2,000

meters (6,500 feet), boil water for at least 2 minutes to disinfect it.

Do not drink or use tap water to brush your teeth, rinse your mouth, mix drinks or make ice cubes without boiling it first.

Please note that boiling water will get rid of viruses, bacteria and parasites but not chemicals which may be found in the water.

Reverse Osmosis (RO): RO is effective against all disease-causing organisms and many chemical contaminants. Unless it has a high capacity, it will only produce small amounts of water and waste a large volume. Speak to a water treatment specialist to see if this is the best option for you.

Ultraviolet (UV) Treatment: UV light will kill many disease-causing organisms, and is effective against almost all parasites. UV will not kill some bacterial spores and some viruses, so it should not be used unless the water supply is at least disinfected. UV treatment units should meet NSF Standard #55A.

Filters: Filters do not remove bacteria and viruses and should not be used unless the water supply is disinfected first.

If you plan to install a drinking water filter in your home, you will need a system labeled as Absolute 1 micron or smaller, and labeled as meeting ANSI/NSF International Standard #53 for removal of parasites.

Jug-type filters, such as a Brita®, which sit in a jug and allow water to trickle through, and some tap-mounted and built-in devices are not an appropriate solution. The jug filter models are not effective in removing many disease-causing organisms.

Can I drink bottled water?

Bottled water in B.C. may or may not have been treated. If you have a very weak immune system, check with the bottling company to find out what treatment, if any, it has had. Bottled water that has been properly treated using one of the methods listed above can be used for drinking, brushing teeth, making ice cubes and for recipes where water is used but not boiled, such as cold soups.

For more information

For more information, including the level of treatment in your local water system, contact your drinking water purveyor or supplier, or the local environmental health officer or drinking water officer. To find your health authority's drinking water contact visit

www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/drinking-water-quality/health-authority-contacts.

For more information about water-borne infections and how to safely disinfect your drinking water, see the following HealthLinkBC Files:

- [HealthLinkBC File #49a Water-borne infections in British Columbia](#)
- [HealthLinkBC File #49b Disinfecting drinking water](#)
- [HealthLinkBC File #69b Feeding your baby formula: Safely making and storing formula](#)

For more HealthLinkBC File topics, visit www.HealthLinkBC.ca/healthfiles or your local public health unit. For non-emergency health information and advice in B.C. visit www.HealthLinkBC.ca or call **8-1-1** (toll-free). For the deaf and hard of hearing, call **7-1-1**. Translation services are available in more than 130 languages on request.

Appendix C

Sample Range Report (Fraser Health Authority)

Sample Range Report

Fraser Health Authority

Facility Name: Clearbrook Waterworks District

Date Range: Jan 1 2025 to Dec 31 2025

Operator Jason Hildebrandt
2889 Grandview Cres
Abbotsford, BC V2T 2R6

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>31419 Springhill Court, 31419 Springhill Court</u>				
	1-27-2025 7:49:00 AM	LT1	LT1	
	2-24-2025 8:34:00 AM	LT1	LT1	
	4-7-2025 9:11:00 AM	LT1	LT1	
	5-20-2025 8:15:00 AM	LT1	LT1	
	8-11-2025 8:56:00 AM	LT1	LT1	
	9-22-2025 8:32:00 AM	LT1	LT1	
	11-3-2025 8:08:00 AM	LT1	LT1	
	12-15-2025 9:20:00 AM	<u>LT1</u>	<u>LT1</u>	
	Total Positive:	0	0	0
<u>2940 Clearbrook Rd.(Bible Col), 2940 Clearbrook Road</u>				
	1-6-2025 9:18:00 AM	LT1	LT1	
	2-10-2025 8:13:00 AM	LT1	LT1	
	3-17-2025 9:25:00 AM	LT1 GTR200	LT1 GTR200	
	4-14-2025 9:37:00 AM	LT1	LT1	
	5-20-2025 8:42:00 AM	LT1	LT1	
	6-23-2025 8:24:00 AM	LT1	LT1	
	7-21-2025 9:33:00 AM	LT1	LT1	
	8-25-2025 8:45:00 AM	LT1	LT1	
	10-1-2025 9:14:00	LT1	LT1	

AM			
10-27-2025 9:24:00	LT1	LT1	
AM			
12-1-2025 8:45:00	<u>LT1</u>	<u>LT1</u>	
AM			
Total Positive:	0	0	0

3089 Claudia Court,
3089 Claudia Court

1-6-2025 9:11:00	ESTCT 1 ESTHCD	LT1	
AM			
1-13-2025 8:36:00	LT1	LT1	
AM			
2-4-2025 11:40:00	LT1	LT1	
AM			
3-10-2025 9:53:00	LT1 GTR200	LT1 GTR200	
AM			
3-17-2025 9:16:00	LT1 GTR200	LT1 GTR200	
AM			
4-14-2025 9:29:00	LT1	LT1	
AM			
5-12-2025 8:40:00	LT1	LT1	
AM			
6-16-2025 8:31:00	QRWRT	QRWRT	
AM			
7-21-2025 9:21:00	LT1	LT1	
AM			
8-18-2025 9:20:00	LT1	LT1	
AM			
9-22-2025 8:57:00	LT1	LT1	
AM			
10-27-2025 9:16:00	LT1	LT1	
AM			
11-24-2025 9:15:00	<u>LT1</u>	<u>LT1</u>	
AM			
Total Positive:	1	0	0

2889 Upland Cres,
2889 Upland Cres

1-6-2025 8:32:00	LT1	LT1
AM		
2-18-2025 8:07:00	LT1	LT1
AM		
3-31-2025 8:15:00	1.0	LT1
AM		
5-12-2025 8:24:00	LT1	LT1
AM		
6-23-2025 7:56:00	LT1	LT1
AM		
8-5-2025 8:23:00	LT1	LT1
AM		
9-15-2025 8:48:00	LT1	LT1
AM		
10-27-2025 8:59:00	LT1	LT1

AM			
12-8-2025 9:14:00	<u>LT1</u>	<u>LT1</u>	
AM			
Total Positive:	1	0	0

2459 Centre Street
(at United Rentals).
2459 Centre Street
(at United Rentals)

1-6-2025 8:41:00	LT1	LT1
AM		
2-18-2025 8:39:00	LT1	LT1
AM		
3-10-2025 9:29:00	LT1	LT1
AM		
4-14-2025 9:16:00	LT1	LT1
AM		
5-20-2025 8:29:00	LT1	LT1
AM		
6-16-2025 8:11:00	QRWRT	QRWRT
AM		
7-21-2025 9:12:00	LT1	LT1
AM		
8-25-2025 8:35:00	LT1	LT1
AM		
9-22-2025 8:45:00	LT1	LT1
AM		
10-27-2025 9:07:00	LT1	LT1
AM		
12-1-2025 8:33:00	<u>LT1</u>	<u>LT1</u>
AM		
Total Positive:	0	0

32171 South Fraser
Way (Petro
Canada), 32171
South Fraser Way
(Petro Canada)

1-27-2025 8:09:00	LT1	LT1
AM		
3-10-2025 9:34:00	LT1	LT1
AM		
4-7-2025 9:57:00	LT1	LT1
AM		
5-6-2025 9:21:00	LT1	LT1
AM		
6-16-2025 8:20:00	QRWRT	QRWRT
AM		
7-14-2025 8:35:00	LT1	LT1
AM		
8-11-2025 9:09:00	LT1	LT1
AM		
9-15-2025 9:05:00	LT1	LT1
AM		

10-20-2025 9:28:00 AM	LT1	LT1	
11-17-2025 9:34:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

2749 Braeside
Street, 2749
Braeside Street

2-4-2025 11:24:00 AM	LT1	LT1	
3-3-2025 7:53:00 AM	LT1	LT1	
4-14-2025 9:12:00 AM	LT1	LT1	
5-26-2025 8:07:00 AM	LT1	LT1	
7-7-2025 9:06:00 AM	LT1	LT1	
8-18-2025 9:05:00 AM	LT1	LT1	
10-1-2025 10:59:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

2903 Palm Crescent,
2903 Palm Crescent

1-27-2025 7:51:00 AM	LT1	LT1	
2-24-2025 8:01:00 AM	LT1	LT1	
3-31-2025 8:27:00 AM	LT1	LT1	
5-6-2025 9:00:00 AM	LT1	LT1	
6-2-2025 7:54:00 AM	LT1	LT1	
7-7-2025 8:59:00 AM	LT1	LT1	
8-11-2025 8:16:00 AM	LT1	LT1	
9-8-2025 8:48:00 AM	LT1	LT1	
10-13-2025 9:03:00 AM	QRWRT	QRWRT	
10-20-2025 8:49:00 AM	LT1	LT1	
11-17-2025 9:09:00 AM	LT1	LT1	
12-15-2025 9:10:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

2464 Sunnyside
Place, 2464
Sunnyside Place

1-13-2025 8:09:00 AM	LT1	LT1	
3-17-2025 9:07:00 AM	LT1 GTR200	LT1 GTR200	
4-27-2025 8:45:00 AM	QRWRT	QRWRT	
6-9-2025 9:35:00 AM	LT1	LT1	
7-21-2025 9:02:00 AM	LT1	LT1	
9-2-2025 8:21:00 AM	LT1	LT1	
10-13-2025 9:12:00 AM	QRWRT	QRWRT	
11-24-2025 8:39:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

2664 Albert Way.
2664 Albert Way

1-20-2025 8:46:00 AM	LT1	LT1	
3-10-2025 9:20:00 AM	LT1	LT1	
4-22-2025 9:15:00 AM	LT1	LT1	
6-2-2025 8:04:00 AM	LT1	LT1	
7-14-2025 8:24:00 AM	LT1	LT1	
8-25-2025 8:27:00 AM	LT1	LT1	
10-6-2025 8:24:00 AM	LT1	LT1	
11-17-2025 9:23:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

2577 Victoria Street.
2577 Victoria St

1-13-2025 8:17:00 AM	LT1	LT1	
2-18-2025 8:28:00 AM	LT1	LT1	
3-24-2025 9:43:00 AM	LT1	LT1	
4-22-2025 9:02:00 AM	LT1	LT1	
5-26-2025 8:20:00 AM	LT1	LT1	
7-28-2025 9:19:00	LT1	LT1	

AM			
9-2-2025 8:48:00	LT1	LT1	
AM			
10-6-2025 8:33:00	LT1	LT1	
AM			
11-3-2025 8:39:00	LT1	LT1	
AM			
12-8-2025 9:20:00	<u>LT1</u>	<u>LT1</u>	
AM			
Total Positive:	0	0	0

31898 Royal
Crescent, 31898
Royal Crescent

2-4-2025 11:30:00	LT1	LT1	
AM			
3-3-2025 8:06:00	LT1	LT1	
AM			
4-7-2025 9:42:00	LT1 GTR200	LT1 GTR200	
AM			
5-12-2025 8:32:00	LT1	LT1	
AM			
6-9-2025 10:47:00	LT1	LT1	
AM			
7-14-2025 8:43:00	LT1	LT1	
AM			
8-18-2025 9:13:00	LT1	LT1	
AM			
9-15-2025 9:16:00	LT1	LT1	
AM			
10-20-2025 8:58:00	LT1	LT1	
AM			
11-24-2025 9:08:00	<u>LT1</u>	<u>LT1</u>	
AM			
Total Positive:	0	0	0

32073 Mt
Waddington Ave.,
32073 Mt
Waddington Ave

1-20-2025 9:16:00	LT1	LT1	
AM			
2-24-2025 8:20:00	LT1	LT1	
AM			
3-31-2025 8:40:00	LT1	LT1	
AM			
4-27-2025 9:13:00	QRWRT	QRWRT	
AM			
6-2-2025 8:26:00	LT1	LT1	
AM			
7-7-2025 9:15:00	LT1	LT1	
AM			
8-5-2025 9:39:00	LT1	LT1	
AM			

9-8-2025 9:48:00 AM	LT1	LT1	
10-13-2025 10:48:00 AM	QRWRT	QRWRT	
10-20-2025 9:09:00 AM	LT1	LT1	
12-15-2025 9:52:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

2425 Lynden Street.
2425 Lynden Street

1-27-2025 8:16:00 AM	LT1	LT1	
3-3-2025 8:29:00 AM	LT1	LT1	
3-31-2025 8:56:00 AM	LT1	LT1	
5-6-2025 9:28:00 AM	LT1	LT1	
6-9-2025 9:45:00 AM	LT1	LT1	
7-7-2025 9:24:00 AM	LT1	LT1	
8-11-2025 9:17:00 AM	LT1	LT1	
9-15-2025 8:58:00 AM	LT1	LT1	
10-13-2025 10:40:00 AM	QRWRT	QRWRT	
11-17-2025 9:42:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

32350 Diamond
Cres, 32350
Diamond Cres

1-13-2025 8:25:00 AM	LT1	LT1
2-10-2025 9:26:00 AM	LT1	LT1
3-17-2025 9:33:00 AM	LT1	LT1
4-22-2025 11:00:00 AM	LT1	LT1
5-20-2025 8:51:00 AM	LT1	LT1
6-23-2025 8:31:00 AM	LT1	LT1
7-28-2025 9:40:00 AM	LT1	LT1
8-25-2025 8:53:00 AM	LT1	LT1
10-1-2025 9:22:00	LT1	LT1

AM			
11-3-2025 9:20:00	LT1	LT1	
AM			
12-1-2025 8:51:00	<u>1.0</u>	<u>LT1</u>	
AM			
Total Positive:	1	0	0

2580 Langdon St -
East end of
driveway, 2580
Langdon St - East
end of driveway

1-20-2025 9:07:00	LT1	LT1	
AM			
2-24-2025 8:51:00	LT1	LT1	
AM			
3-24-2025 9:57:00	LT1	LT1	
AM			
4-27-2025 9:25:00	QRWRT	QRWRT	
AM			
6-2-2025 8:16:00	LT1	LT1	
AM			
8-5-2025 9:13:00	LT1	LT1	
AM			
9-8-2025 9:21:00	LT1	LT1	
AM			
10-6-2025 9:30:00	LT1	LT1	
AM			
12-15-2025 9:41:00	<u>LT1</u>	<u>LT1</u>	
AM			
Total Positive:	0	0	0

2743 Moorland St.
2743 Moorland St

2-10-2025 7:56:00	LT1	LT1	
AM			
3-24-2025 9:34:00	LT1	LT1	
AM			
5-6-2025 9:11:00	LT1	LT1	
AM			
6-16-2025 8:00:00	QRWRT	QRWRT	
AM			
7-28-2025 9:09:00	LT1	LT1	
AM			
9-8-2025 9:08:00	LT1	LT1	
AM			
10-20-2025 8:30:00	LT1	LT1	
AM			
12-1-2025 8:22:00	<u>1.0</u>	<u>LT1</u>	
AM			
Total Positive:	1	0	0

31894 Duchess Ave.

31894 Duchess Ave

1-20-2025 8:54:00 AM	LT1	LT1	
2-18-2025 8:20:00 AM	LT1	LT1	
3-24-2025 9:40:00 AM	LT1 GTR200	LT1 GTR200	
4-27-2025 9:00:00 AM	QRWRT	QRWRT	
5-26-2025 8:37:00 AM	LT1	LT1	
8-5-2025 9:28:00 AM	LT1	LT1	
9-2-2025 9:01:00 AM	LT1	LT1	
10-6-2025 8:45:00 AM	LT1	LT1	
12-8-2025 9:27:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

32138 George
Ferguson Way.
32138 George
Ferguson Way

2-4-2025 11:48:00 AM	LT1	LT1	
3-3-2025 8:12:00 AM	LT1	LT1	
4-7-2025 9:49:00 AM	LT1	LT1	
5-12-2025 8:56:00 AM	LT1	LT1	
6-9-2025 10:54:00 AM	LT1	LT1	
7-14-2025 8:51:00 AM	LT1	LT1	
8-18-2025 9:28:00 AM	LT1	LT1	
9-22-2025 9:06:00 AM	LT1	LT1	
10-20-2025 9:17:00 AM	LT1	LT1	
11-24-2025 9:22:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

2548 Clearbrook
Rd., 2548
Clearbrook Rd.

1-13-2025 8:28:00 AM	LT1	LT1	
2-10-2025 8:04:00 AM	LT1	LT1	

3-17-2025 8:57:00 AM	LT1 GTR200	LT1 GTR200	
4-22-2025 8:54:00 AM	LT1	LT1	
5-26-2025 8:50:00 AM	LT1	LT1	
6-23-2025 8:13:00 AM	LT1	LT1	
7-28-2025 9:27:00 AM	LT1	LT1	
9-2-2025 8:55:00 AM	LT1	LT1	
10-1-2025 11:25:00 AM	LT1	LT1	
11-3-2025 9:10:00 AM	LT1	LT1	
12-8-2025 9:41:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	0	0	0

Reservoir B (2022),
2889 Grandview
Cres

1-6-2025 8:24:00 AM	LT1	LT1	
2-4-2025 11:15:00 AM	LT1	LT1	
4-7-2025 9:01:00 AM	LT1	LT1	
5-6-2025 8:54:00 AM	LT1	LT1	
6-9-2025 9:24:00 AM	LT1	LT1	
7-7-2025 8:29:00 AM	LT1	LT1	
8-5-2025 9:19:00 AM	LT1	LT1	
9-8-2025 6:00:00 AM	LT1	LT1	
10-6-2025 8:16:00 AM	LT1	LT1	
11-3-2025 8:19:00 AM	1	LT1	
11-17-2025 9:53:00 AM	LT1	LT1	
11-24-2025 8:21:00 AM	LT1	LT1	
12-8-2025 10:01:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:	1	0	0

Result Values:

E - estimated

L - less than

G - greater than

Samples that contain total coliform:	5	2.39% of total
Samples that contain e. coli:	0	0.00% of total

Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/0	
Total number of samples:	209	

Comments:

Environmental Health Officer

Feb 2 2026

FOR FURTHER INFORMATION PLEASE CALL: Barb Haworth

Sample Range Report

Fraser Health Authority

Facility Name: RW 1-87-14

Date Range: Jan 1 2025 to Dec 31 2025

Operator

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>RW 1-87-14,</u> <u>Autumn Ave</u>	1-6-2025 8:58:00 AM	LT1	LT1	
	5-6-2025 9:42:00 AM	LT1	LT1	
	9-8-2025 9:36:00 AM	<u>LT1</u>	<u>LT1</u>	
	Total Positive:	0	0	0

Result Values:

E - estimated

L - less than

G - greater than

Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/0	
Total number of samples:	3	

Comments:

Environmental Health Officer

Feb 2 2026

FOR FURTHER INFORMATION PLEASE CALL: Barb Haworth

Sample Range Report

Fraser Health Authority

Facility Name: RW 3-93

Date Range: Jan 1 2025 to Dec 31 2025

Operator

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>RW 3-93, Lynden St</u>				
	2-4-2025 12:06:00 PM	LT1	LT1	
	6-9-2025 9:58:00 AM	LT1 GTR200	LT1 GTR200	
	10-6-2025 9:23:00 AM	LT1	LT1	
	11-3-2025 9:01:00 AM	<u>LT1</u>	<u>LT1</u>	
	Total Positive:	0	0	0

Result Values: **E - estimated** **L - less than** **G - greater than**

Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/0	
Total number of samples:	4	

Comments:

Environmental Health Officer
Feb 2 2026

FOR FURTHER INFORMATION PLEASE CALL: Barb Haworth

Sample Range Report

Fraser Health Authority

Facility Name: Well # 2-63

Date Range: Jan 1 2025 to Dec 31 2025

Operator

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
Well RW 2 - 63 , Autumn Ave	7-7-2025 9:28:00 AM	<u>LT1</u>	<u>LT1</u>	
Total Positive:		0	0	0

Result Values: E - estimated L - less than G - greater than

Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/0	
Total number of samples:	1	

Comments:

Environmental Health Officer

Feb 2 2026

FOR FURTHER INFORMATION PLEASE CALL: Barb Haworth

Sample Range Report

Fraser Health Authority

Facility Name: Well # 7-00

Date Range: Jan 1 2025 to Dec 31 2025

Operator

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Well RW 7 - 00/13,</u>				
<u>Lynden St</u>				
	4-7-2025 9:31:00 AM	LT1	LT1	
	8-5-2025 9:02:00 AM	LT1	LT1	
	12-8-2025 9:51:00 AM	<u>LT1</u>	<u>LT1</u>	
	Total Positive:	0	0	0

Result Values: **E - estimated** **L - less than** **G - greater than**

Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/0	
Total number of samples:	3	

Comments:

Environmental Health Officer

Feb 2 2026

FOR FURTHER INFORMATION PLEASE CALL: Barb Haworth

Appendix D

July Water Quality Report – Routine Water Quality Analysis (Element) &
PFAS Analysis (Pacific Rim Laboratory)

Report Transmission Cover Page

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Contact	Company	Address
Accounts Payable	Clearbrook Waterworks District	2889 Grandview Crescent Abbotsford, BC V2T 2R6 Phone: (604) 850-6621 Fax: (604) 850-7862 Email: office@clearbrookwaterworks.com

Delivery	Format	Deliverables
Email - Merge	PDF	COC / Invoice

Ineke Kalwij	Kalwij Water Dynamics Inc	P.O. Box 684 Station Main Port Coquitlam, BC V3B 6H9 Phone: (604) 615-4932 Fax: (604) 475-4062 Email: ineke@kalwijwaterdynamics.com
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Delivery	Format	Deliverables
Email	PDF	COC / Test Report
Email	Standard Crosstab Without Tabs	Test Report
Email - Merge	PDF	COA
Email - Merge	PDF	COA / COC

Ryan Federau	Clearbrook Waterworks District	2889 Grandview Crescent Abbotsford, BC V2T 2R6 Phone: (604) 309-3986 Fax: (604) 850-7862 Email: ryan@clearbrookwaterworks.com
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Delivery	Format	Deliverables
Email - Merge	PDF	COA / COC
Email - Merge	PDF	COC / Test Report

Notes To Clients:

- Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for lot 1831433. Detection limits are adjusted accordingly.

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-1
Sample Date July 25, 2025
Sample Time 09:32
Sample Location
Sample Description RW 1-87/14 / 9.4 °C
Sample Matrix Water

Analyte		Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00010	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0018	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.027	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.032	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00002	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00097	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	<0.0005	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	0.00016	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	0.0003	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.11	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00023	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00043	0.00005		
Zinc	Extractable	mg/L	0.0005	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	<2.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.21	0.1		
Routine Water						
pH			7.62	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	23.6			
Electrical Conductivity	at 25 °C	µS/cm	327	1		
Calcium	Extractable	mg/L	28	0.01		
Iron	Extractable	mg/L	0.010	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	7.3	0.02		
Manganese	Extractable	mg/L	0.064	0.001	0.02 AO, 0.12 MAC	Above AO
Potassium	Extractable	mg/L	2.3	0.04		
Silicon	Extractable	mg/L	8.6	0.005		
Sodium	Extractable	mg/L	16	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	102	5		
Chloride	Dissolved	mg/L	20.1	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-1
Sample Date July 25, 2025
Sample Time 09:32
Sample Location
Sample Description RW 1-87/14 / 9.4 °C
Sample Matrix Water

Sample Analysis				Guideline Limit	Guideline Comments	
Analyte		Units	Result	Nominal DL		
Routine Water - Continued						
Nitrate - N	Dissolved	mg/L	0.62	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	23.3	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	99	1		
Total Dissolved Solids	Extractable	mg/L	184	1	500	Below AO
Subcontracted Analysis						
Subcontractor Report Id			PR253008			

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-2
Sample Date July 25, 2025
Sample Time 09:45
Sample Location
Sample Description 2425 Lynden St / 9.4 °C
Sample Matrix Water

Sample Matrix			Water			
Analyte		Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00004	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0004	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0075	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.013	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00003	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00014	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0061	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	0.00051	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	0.0002	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.13	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00002	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00037	0.00005		
Zinc	Extractable	mg/L	0.014	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	10.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.17	0.1		
Routine Water						
pH			7.17	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	23.6			
Electrical Conductivity	at 25 °C	µS/cm	278	1		
Calcium	Extractable	mg/L	23	0.01		
Iron	Extractable	mg/L	<0.004	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	5.5	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable	mg/L	1.2	0.04		
Silicon	Extractable	mg/L	10	0.005		
Sodium	Extractable	mg/L	9.0	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	38	5		
Chloride	Dissolved	mg/L	43.9	0.05	250	Below AO
Fluoride	Dissolved	ma/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-2
Sample Date July 25, 2025
Sample Time 09:45
Sample Location
Sample Description 2425 Lynden St / 9.4 °C
Sample Matrix Water

Sample Matrix		Water		Guideline		Guideline
Analyte	Units	Result	Nominal DL	Limit	Comments	
Routine Water - Continued						
Nitrate - N	Dissolved	mg/L	2.39	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	14.4	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	79	1		
Total Dissolved Solids	Extractable	mg/L	158	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-3
Sample Date July 25, 2025
Sample Time 10:01
Sample Location
Sample Description RW 2-63/17 / 9.4 °C
Sample Matrix Water

Sample Matrix		Water		Guideline		
Analyte		Units	Result	Nominal DL	Limit	Comments
Metals Extractable						
Aluminum	Extractable	mg/L	0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00008	0.00002		0.006
Arsenic	Extractable	mg/L	0.0008	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.011	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.019	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00002	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00008	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	<0.0005	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	<0.00001	0.00001		0.005
Selenium	Extractable	mg/L	0.0008	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.084	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00006	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00033	0.00005		
Zinc	Extractable	mg/L	0.0009	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	<2.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.25	0.1		
Routine Water						
pH			7.24	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	23.6			
Electrical Conductivity	at 25 °C	µS/cm	232	1		
Calcium	Extractable	mg/L	25	0.01		
Iron	Extractable	mg/L	0.006	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	6.4	0.02		
Manganese	Extractable	mg/L	0.006	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable	mg/L	1.6	0.04		
Silicon	Extractable	mg/L	9.0	0.005		
Sodium	Extractable	mg/L	8.5	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	62	5		
Chloride	Dissolved	mg/L	15.8	0.05	250	Below AO
Fluoride	Dissolved	ma/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-3
Sample Date July 25, 2025
Sample Time 10:01
Sample Location
Sample Description RW 2-63/17 / 9.4 °C
Sample Matrix Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Routine Water - Continued					
Nitrate - N	Dissolved mg/L	1.42	0.01	10	Below MAC
Nitrite - N	Dissolved mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved mg/L	20.9	0.1	500	Below AO
Hardness	as CaCO3 (extractable) mg/L	89	1		
Total Dissolved Solids	Extractable mg/L	146	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-4
Sample Date July 25, 2025
Sample Time 10:25
Sample Location
Sample Description RW3-93/11 / 9.4 °C
Sample Matrix Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable					
Aluminum	Extractable mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable mg/L	0.00004	0.00002	0.006	Below MAC
Arsenic	Extractable mg/L	0.0005	0.0001	0.010	Below MAC
Barium	Extractable mg/L	0.0098	0.0001	2.0	Below MAC
Boron	Extractable mg/L	0.015	0.002	5	Below MAC
Cadmium	Extractable mg/L	0.00004	0.00001	0.007	Below MAC
Chromium	Extractable mg/L	0.00016	0.00005	0.05	Below MAC
Copper	Extractable mg/L	0.0013	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable mg/L	0.00015	0.00001	0.005	Below MAC
Selenium	Extractable mg/L	0.0004	0.0002	0.05	Below MAC
Strontium	Extractable mg/L	0.16	0.0001	7.0	Below MAC
Uranium	Extractable mg/L	0.00007	0.00001	0.02	Below MAC
Vanadium	Extractable mg/L	0.00041	0.00005		
Zinc	Extractable mg/L	0.019	0.0005	5.0	Below AO
Microbiological Analysis					
Total Coliforms	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate MPN/mL	4.0	2		
Physical and Aggregate Properties					
Colour	True Colour units	<5	5		
Turbidity	NTU	0.19	0.1		
Routine Water					
pH		7.12	0.01	7.0-10.5	Within Range
pH - Holding Time		Exceeded			
Temp. of observed pH	°C	23.8			
Electrical Conductivity at 25 °C	µS/cm	365	1		
Calcium	Extractable mg/L	37	0.01		
Iron	Extractable mg/L	<0.004	0.004	0.1	Below AO
Magnesium	Extractable mg/L	8.9	0.02		
Manganese	Extractable mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable mg/L	1.8	0.04		
Silicon	Extractable mg/L	10.0	0.005		
Sodium	Extractable mg/L	14	0.1	200	Below AO
T-Alkalinity	as CaCO3 mg/L	59	5		
Chloride	Dissolved mg/L	64.8	0.05	250	Below AO
Fluoride	Dissolved mg/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
 2889 Grandview Crescent
 Abbotsford, BC, Canada
 V2T 2R6
 Attn: Accounts Payable
 Sampled By:
 Company:

Project ID:
 Project Name:
 Project Location:
 LSD:
 P.O.:
 Proj. Acct. code:

Lot ID: **1831433**
 Control Number:
 Date Received: Jul 25, 2025
 Date Reported: Aug 18, 2025
 Report Number: 3162641
 Report Type: Final Report

Reference Number 1831433-4
Sample Date July 25, 2025
Sample Time 10:25
Sample Location
Sample Description RW3-93/11 / 9.4 °C
Sample Matrix Water

Sample Analysis				Guideline Limit	Guideline Comments	
Analyte		Units	Result	Nominal DL		
Routine Water - Continued						
Nitrate - N	Dissolved	mg/L	1.98	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	19.8	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	130	1		
Total Dissolved Solids	Extractable	mg/L	218	1	500	Below AO
Subcontracted Analysis						
Subcontractor Report Id			PR253008			

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-5
Sample Date July 25, 2025
Sample Time 10:40
Sample Location
Sample Description RW 7-00/13 / 9.4 °C
Sample Matrix Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable					
Aluminum	Extractable mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable mg/L	0.00003	0.00002	0.006	Below MAC
Arsenic	Extractable mg/L	0.0004	0.0001	0.010	Below MAC
Barium	Extractable mg/L	0.0074	0.0001	2.0	Below MAC
Boron	Extractable mg/L	0.011	0.002	5	Below MAC
Cadmium	Extractable mg/L	0.00003	0.00001	0.007	Below MAC
Chromium	Extractable mg/L	0.00018	0.00005	0.05	Below MAC
Copper	Extractable mg/L	0.0017	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable mg/L	0.00021	0.00001	0.005	Below MAC
Selenium	Extractable mg/L	0.0002	0.0002	0.05	Below MAC
Strontium	Extractable mg/L	0.13	0.0001	7.0	Below MAC
Uranium	Extractable mg/L	0.00003	0.00001	0.02	Below MAC
Vanadium	Extractable mg/L	0.00043	0.00005		
Zinc	Extractable mg/L	0.012	0.0005	5.0	Below AO
Microbiological Analysis					
Total Coliforms	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate MPN/mL	4.0	2		
Physical and Aggregate Properties					
Colour	True Colour units	<5	5		
Turbidity	NTU	0.19	0.1		
Routine Water					
pH		7.20	0.01	7.0-10.5	Within Range
pH - Holding Time		Exceeded			
Temp. of observed pH	°C	23.5			
Electrical Conductivity	at 25 °C µS/cm	279	1		
Calcium	Extractable mg/L	23	0.01		
Iron	Extractable mg/L	<0.004	0.004	0.1	Below AO
Magnesium	Extractable mg/L	5.6	0.02		
Manganese	Extractable mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable mg/L	1.2	0.04		
Silicon	Extractable mg/L	10	0.005		
Sodium	Extractable mg/L	9.0	0.1	200	Below AO
T-Alkalinity	as CaCO3 mg/L	38	5		
Chloride	Dissolved mg/L	44.2	0.05	250	Below AO
Fluoride	Dissolved mg/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-5
Sample Date July 25, 2025
Sample Time 10:40
Sample Location
Sample Description RW 7-00/13 / 9.4 °C
Sample Matrix Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments	
Routine Water - Continued						
Nitrate - N	Dissolved	mg/L	2.39	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	14.3	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	81	1		
Total Dissolved Solids	Extractable	mg/L	159	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-6
Sample Date July 25, 2025
Sample Time 11:10
Sample Location
Sample Description Reservoir B / 9.4 °C
Sample Matrix Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable					
Aluminum	Extractable mg/L	0.002	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable mg/L	0.00006	0.00002	0.006	Below MAC
Arsenic	Extractable mg/L	0.0007	0.0001	0.010	Below MAC
Barium	Extractable mg/L	0.014	0.0001	2.0	Below MAC
Boron	Extractable mg/L	0.020	0.002	5	Below MAC
Cadmium	Extractable mg/L	0.00002	0.00001	0.007	Below MAC
Chromium	Extractable mg/L	0.00015	0.00005	0.05	Below MAC
Copper	Extractable mg/L	<0.0005	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable mg/L	<0.00001	0.00001	0.005	Below MAC
Selenium	Extractable mg/L	0.0003	0.0002	0.05	Below MAC
Strontium	Extractable mg/L	0.13	0.0001	7.0	Below MAC
Uranium	Extractable mg/L	0.00010	0.00001	0.02	Below MAC
Vanadium	Extractable mg/L	0.00047	0.00005		
Zinc	Extractable mg/L	0.0006	0.0005	5.0	Below AO
Microbiological Analysis					
Total Coliforms	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate MPN/mL	2.0	2		
Physical and Aggregate Properties					
Colour	True Colour units	<5	5		
Turbidity	NTU	0.60	0.1		
Routine Water					
pH		7.47	0.01	7.0-10.5	Within Range
pH - Holding Time		Exceeded			
Temp. of observed pH	°C	23.5			
Electrical Conductivity at 25 °C	µS/cm	305	1		
Calcium	Extractable mg/L	25	0.01		
Iron	Extractable mg/L	0.016	0.004	0.1	Below AO
Magnesium	Extractable mg/L	6.1	0.02		
Manganese	Extractable mg/L	0.002	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable mg/L	1.5	0.04		
Silicon	Extractable mg/L	9.8	0.005		
Sodium	Extractable mg/L	11	0.1	200	Below AO
T-Alkalinity	as CaCO3 mg/L	63	5		
Chloride	Dissolved mg/L	37.2	0.05	250	Below AO
Fluoride	Dissolved mg/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-6
Sample Date July 25, 2025
Sample Time 11:10
Sample Location
Sample Description Reservoir B / 9.4 °C
Sample Matrix Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments	
Routine Water - Continued						
Nitrate - N	Dissolved	mg/L	1.72	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	18.4	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	88	1		
Total Dissolved Solids	Extractable	mg/L	171	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-7
Sample Date July 25, 2025
Sample Time 11:00
Sample Location
Sample Description 2464 Sunnyside Pl. / 9.4 °C
Sample Matrix Water

Analyte		Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00006	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0008	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.014	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.018	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00001	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00015	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0044	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	0.00053	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	0.0003	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.13	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00008	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00046	0.00005		
Zinc	Extractable	mg/L	0.016	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	2.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.30	0.1		
Routine Water						
pH			7.44	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	23.5			
Electrical Conductivity	at 25 °C	µS/cm	300	1		
Calcium	Extractable	mg/L	27	0.01		
Iron	Extractable	mg/L	0.004	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	6.3	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable	mg/L	1.6	0.04		
Silicon	Extractable	mg/L	9.8	0.005		
Sodium	Extractable	mg/L	11	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	58	5		
Chloride	Dissolved	mg/L	38.2	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831433**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162641
Report Type: Final Report

Reference Number 1831433-7
Sample Date July 25, 2025
Sample Time 11:00
Sample Location
Sample Description 2464 Sunnyside Pl. / 9.4 °C
Sample Matrix Water

Sample Matrix		Water		Guideline		Guideline
Analyte	Units	Result	Nominal DL	Limit	Comments	
Routine Water - Continued						
Nitrate - N	Dissolved	mg/L	1.86	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	17.6	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	92	1		
Total Dissolved Solids	Extractable	mg/L	171	1	500	Below AO

Approved by:



Carol Nam, Dipl. T.
Quality Assurance Coordinator

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Clearbrook Waterworks District 2889 Grandview Crescent Abbotsford, BC, Canada V2T 2R6	Project ID: Project Name: Project Location: LSD: P.O.:	Lot ID: 1831433 Control Number: Date Received: Jul 25, 2025 Date Reported: Aug 18, 2025 Report Number: 3162641 Report Type: Final Report
Attn: Accounts Payable	Proj. Acct. code:	
Sampled By:		
Company:		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (BC)	APHA	* Alkalinity - Titration Method, 2320 B	Jul 26, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Alkalinity - Titration Method, 2320 B	Jul 29, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Alkalinity - Titration Method, 2320 B	Jul 30, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Conductivity, 2510 B	Jul 26, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Conductivity, 2510 B	Jul 29, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Conductivity, 2510 B	Jul 30, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* pH - Electrometric Method, 4500-H+ B	Jul 26, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* pH - Electrometric Method, 4500-H+ B	Jul 29, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* pH - Electrometric Method, 4500-H+ B	Jul 30, 2025	Element Vancouver
Anions by IEC in water (VAN)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	Jul 28, 2025	Element Vancouver
Heterotrophic (Standard) Plate Count (Aerobic SP) - VAN	APHA	Enzyme Substrate Method, 9215 E	Jul 25, 2025	Element Vancouver
Metals SemiTrace (Extractable) in water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Jul 28, 2025	Element Vancouver
Metals SemiTrace (Extractable) in water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Jul 30, 2025	Element Vancouver
PFOS and PFOA - Perfluoroalkyl Acids	Ext. Lab	See attached test report,	Aug 18, 2025	Pacific Rim Laboratories Inc.
PFOS and PFOA - Perfluoroalkyl Acids	Ext. Lab	See attached test report,	Aug 18, 2025	Pacific Rim Laboratories Inc.
Total and E-Coli - Colilert - DW (VAN)	APHA	Enzyme Substrate Test, APHA 9223 B	Jul 25, 2025	Element Vancouver
Trace Metals (extractable) in Water (VAN)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Jul 28, 2025	Element Vancouver
True Color in water (VAN)	APHA	* Spectrophotometric - Single Wavelength Method, 2120 C	Jul 26, 2025	Element Vancouver
Turbidity - Water (VAN)	APHA	* Turbidity - Nephelometric Method, 2130 B	Jul 28, 2025	Element Vancouver

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
Ext. Lab	External Laboratory
US EPA	US Environmental Protection Agency Test Methods

Guidelines

Guideline Description	Health Canada GCDWQ
Guideline Source	Guidelines for Canadian Drinking Water Quality, Health Canada, August 2024
Guideline Comments	MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guideline for Water Treatment Plants (does not apply to private groundwater wells). Refer to Health Canada for complete guidelines at www.hc-sc.gc.ca

Methodology and Notes

Bill To:	Clearbrook Waterworks District	Project ID:
	2889 Grandview Crescent	Project Name:
	Abbotsford, BC, Canada	Project Location:
	V2T 2R6	LSD:
Attn:	Accounts Payable	P.O.:
Sampled By:		Proj. Acct. code:
Company:		

Lot ID:	1831433
Control Number:	
Date Received:	Jul 25, 2025
Date Reported:	Aug 18, 2025
Report Number:	3162641
Report Type:	Final Report

Comments:

- Reduction of analytical volume was necessary for chloride analysis to bring results within the analytical range for lot 1831433. Detection limits are adjusted accordingly.

The comparison of test results to guideline limits is provided for information purposes only. This is not to be taken as a statement of conformance / nonconformance to any guideline, regulation or limit. The data user is responsible for all conclusions drawn with respect to the data and is advised to consult official regulatory references when evaluating compliance.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

SAMPLE RECEIPT FORM / DATA REPORT

FILE #: PR253008

CLIENT: Element Materials Technology
#104, 19575-55A Avenue
Surrey, BC
V3S 8P8Phone: (604) 514-3322
Email: info.vancouver@element.comRECEIVED BY: J. Isaac
CONDITION: Okay, 21°C

DATE/TIME: July 25, 2025 (3:30 p.m.)

# of Containers	Sample Type	Sample (Client Codes)	Lab Codes	Test Requested
		PO#: POC155619		
1	Water	1831433 – 1	PR253008	PFAS
1	Water	1831433 – 4	PR253009	PFAS

STORAGE: Stored at 4°C.

ANALYTES: LC-MS/MS analysis for perfluorinated and polyfluorinated alkyl substances (PFAS).

SPECIAL INSTRUCTIONS: None.

METHODOLOGY

Reference Method: PFAS: SOP LAB16 EPA 1633

Data summarized in Data Report attached.

Report sent to: Client Services

Date: August 18, 2025

Comments: Results relate only to samples as received.

Kjell Hope, MSc., Lab Manager

DATA REPORT

Client: Element Materials Technology
Contact: Client Services

Date Extracted: 13-Aug-25
Date Analysed: 15-Aug-25

Compound	Client ID: 1831433 – 1		1831433 – 4		BLANK	
	PRL ID: PR253008		PR253009		FA257110B	
	DL µg/L	µg/L	µg/L		µg/L	
PERFLUOROALKYL ACIDS						
Perfluorobutanoic acid	PFBA	0.001	0.002	0.006		ND
Perfluoropentanoic acid	PFPeA	0.001	0.004	0.014		ND
Perfluorohexanoic acid	PFHxA	0.001	0.002	0.009		ND
Perfluoroheptanoic acid	PFHpA	0.001	ND	0.004		ND
Perfluorooctanoic acid	PFOA	0.001	ND	0.003		ND
Perfluorononanoic acid	PFNA	0.001	ND	ND		ND
Perfluorodecanoic acid	PFDA	0.001	ND	ND		ND
Perfluoroundecanoic acid	PFUdA	0.001	ND	ND		ND
Perfluorododecanoic acid	PFDoA	0.002	ND	ND		ND
Perfluorotridecanoic acid	PFTTrDA	0.002	ND	ND		ND
Perfluorotetradecanoic acid	PFTeDA	0.002	ND	ND		ND

REPLACEMENT PFAS

Hexafluoropropylene oxide dimer acid	HFPO-DA	0.002	ND	ND		ND
4,8-dioxa-3H-perfluorononanoate	ADONA	0.002	ND	ND		ND
9-chlorohexadecafluoro-3-oxanonane sulfonate	9Cl-PF3ONS	0.002	ND	ND		ND
11-chloroeicosafluoro-3-oxaundecane sulfonate	11Cl-Pf3OUdS	0.002	ND	ND		ND

PERFLUOROALKYL SULFONAMIDES

N-Methyl PFOS-amidoacetic acid	NMeFOSAA	0.002	ND	ND		ND
N-Ethyl PFOS-amidoacetic acid	NEtFOSAA	0.002	ND	ND		ND
Perfluorooctanesulfonamide	FOSA	0.002	ND	ND		ND

PERFLUOROALKYL SULFONATES

Perfluorobutanesulfonate	PFBS	0.002	0.006	0.006		ND
Perfluoropentanesulfonate	PFPeS	0.002	ND	ND		ND
Perfluorohexanesulfonate	PFHxS	0.002	ND	0.004		ND
Perfluoroheptanesulfonate	PFHpS	0.002	ND	ND		ND
Perfluorooctanesulfonate	PFOS	0.002	ND	ND		ND
Perfluorononanesulfonate	PFNS	0.002	ND	ND		ND
Perfluorodecanesulfonate	PFDS	0.002	ND	ND		ND

FLUOROTELOMER SULFONATES

4:2 Fluorotelomer sulfonate	4:2 FtS	0.002	ND	ND		ND
6:2 Fluorotelomer sulfonate	6:2 FtS	0.002	ND	ND		ND
8:2 Fluorotelomer sulfonate	8:2 FtS	0.002	ND	ND		ND

DATA REPORT

Client: Element Materials Technology

Date Extracted: 13-Aug-25

Contact: Client Services

Date Analysed: 15-Aug-25

Compound	Client ID:	1831433 – 1	1831433 – 4		BLANK
	PRL ID:	PR253008	PR253009		FA257110B
	DL				

Surrogates (% Recovery)

¹³ C-Perfluorobutanoic acid	MPFBA	90	103		107
¹³ C-Perfluoropentanoic acid	MPFPeA	84	96		98
¹³ C-Perfluorohexanoic acid	MPFHxA	86	104		104
¹³ C-Perfluoroheptanoic acid	MPFHpA	101	109		104
¹³ C-Perfluorooctanoic acid	MPFOA	101	120		109
¹³ C-Perfluorononanoic acid	MPFNoA	82	93		100
¹³ C-Perfluorodecanoic acid	MPFDA	87	78		103
¹³ C-Perfluoroundecanoic acid	MPFUdA	80	73		105
¹³ C-Perfluorododecanoic acid	MPFDoA	73	69		94
¹³ C-Perfluorotetradecanoic acid	MPFTeDA	77	82		80
¹³ C-Perfluorobutanesulfonate	MPFBS	93	116		107
¹³ C-Perfluorohexanesulfonate	MPFHxS	86	125		109
¹³ C-Perfluorooctanesulfonate	MPFOS	79	85		94
¹³ C-Hexafluoropropylene oxide	M3HFPODA	84	96		108
¹³ C-Perfluorooctanesulfonate	D3NMEFOSAA	74	71		95
¹³ C-Perfluorooctanesulfonate	D5NETFOSAA	81	67		82
¹³ C-Perfluorooctanesulfonamide	M8FOSA	86	81		82
¹³ C-4:2 Fluorotelomer sulfonate	M2-4:2FTS	91	113		107
¹³ C-6:2 Fluorotelomer sulfonate	M2-6:2FTS	103	132		135
¹³ C-8:2 Fluorotelomer sulfonate	M2-8:2FTS	84	91		102

Appendix E

December Water Quality Report – Routine Water Quality Analysis (Element)

Report Transmission Cover Page

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Contact	Company	Address
Accounts Payable	Clearbrook Waterworks District	2889 Grandview Crescent Abbotsford, BC V2T 2R6 Phone: (604) 850-6621 Fax: (604) 850-7862 Email: office@clearbrookwaterworks.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Ineke Kalwij	Kalwij Water Dynamics Inc	P.O. Box 684 Station Main Port Coquitlam, BC V3B 6H9 Phone: (604) 615-4932 Fax: (604) 475-4062 Email: ineke@kalwijwaterdynamics.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email	PDF	COC / Test Report
Email	Standard Crosstab Without Tabs	Test Report
Email - Merge	PDF	COA
Email - Merge	PDF	COA / COC
Ryan Federau	Clearbrook Waterworks District	2889 Grandview Crescent Abbotsford, BC V2T 2R6 Phone: (604) 309-3986 Fax: (604) 850-7862 Email: ryan@clearbrookwaterworks.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COA / COC
Email - Merge	PDF	COC / Test Report

Notes To Clients:

- The analysis of water samples 1866628-1,2,3,4,5 are below Maximum Acceptable Concentrations for the chemical and bacteriological health related guidelines specified by the March 2025 Guidelines for Canadian Drinking Water Quality for the parameters tested.

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If you receive this transmission by error, or if this transmission is not satisfactory, please notify us by telephone.

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-1
Sample Date December 17, 2025
Sample Time 12:17
Sample Location
Sample Description RW 2-63/17 / 8.3 °C
Sample Matrix Drinking Water

Analyte		Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	0.004	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00008	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0011	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.012	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.020	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00002	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00039	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	<0.0005	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	<0.00001	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	0.0007	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.089	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00009	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00055	0.00005		
Zinc	Extractable	mg/L	0.0040	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	2.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.73	0.1		
Routine Water						
pH			7.17	0.01	7.0-10.5	Within Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	20.6			
Electrical Conductivity	at 25 °C	µS/cm	260	1		
Calcium	Extractable	mg/L	27	0.01		
Iron	Extractable	mg/L	0.037	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	6.9	0.02		
Manganese	Extractable	mg/L	0.014	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable	mg/L	2.1	0.04		
Silicon	Extractable	mg/L	8.4	0.005		
Sodium	Extractable	mg/L	11	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	72	5		
Chloride	Dissolved	mg/L	17.2	0.05	250	Below AO
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-1
Sample Date December 17, 2025
Sample Time 12:17
Sample Location
Sample Description RW 2-63/17 / 8.3 °C
Sample Matrix Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Routine Water - Continued					
Nitrate - N	Dissolved mg/L	1.29	0.01	10	Below MAC
Nitrite - N	Dissolved mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO ₄)	Dissolved mg/L	22.7	0.1	500	Below AO
Hardness	as CaCO ₃ (extractable) mg/L	95	1		
Total Dissolved Solids	Extractable mg/L	159	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-2
Sample Date December 18, 2025
Sample Time 09:38
Sample Location
Sample Description RW 3-93/11 / 8.3 °C
Sample Matrix Drinking Water

Sample Matrix		Drinking Water				
Analyte		Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00004	0.00002		0.006
Arsenic	Extractable	mg/L	0.0004	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0084	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.014	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00004	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00013	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0011	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	0.00010	0.00001		0.005
Selenium	Extractable	mg/L	0.0005	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.15	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00008	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00048	0.00005		
Zinc	Extractable	mg/L	0.017	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	<2.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.23	0.1		
Routine Water						
pH			6.88	0.01	7.0-10.5	Below Recommended Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	20.7			
Electrical Conductivity	at 25 °C	µS/cm	376	1		
Calcium	Extractable	mg/L	35	0.01		
Iron	Extractable	mg/L	<0.004	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	8.6	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable	mg/L	2.2	0.04		
Silicon	Extractable	mg/L	8.3	0.005		
Sodium	Extractable	mg/L	14	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	55	5		
Chloride	Dissolved	mg/L	60.7	0.05	250	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-2
Sample Date December 18, 2025
Sample Time 09:38
Sample Location
Sample Description RW 3-93/11 / 8.3 °C
Sample Matrix Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments	
Routine Water - Continued						
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	1.91	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	20.1	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	123	1		
Total Dissolved Solids	Extractable	mg/L	205	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-3
Sample Date December 18, 2025
Sample Time 09:26
Sample Location
Sample Description RW 7-00/13 / 8.3 °C
Sample Matrix Drinking Water

Sample Matrix			Drinking Water			
Analyte		Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00003	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0004	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0071	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.011	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00003	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00020	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0018	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	0.00019	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.12	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00002	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00053	0.00005		
Zinc	Extractable	mg/L	0.014	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	2.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.22	0.1		
Routine Water						
pH			6.74	0.01	7.0-10.5	Below Recommended Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	20.9			
Electrical Conductivity	at 25 °C	µS/cm	276	1		
Calcium	Extractable	mg/L	27	0.01		
Iron	Extractable	mg/L	<0.004	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	6.7	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable	mg/L	1.7	0.04		
Silicon	Extractable	mg/L	9.4	0.005		
Sodium	Extractable	mg/L	11	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	40	5		
Chloride	Dissolved	mg/L	42.8	0.05	250	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
 2889 Grandview Crescent
 Abbotsford, BC, Canada
 V2T 2R6
 Attn: Accounts Payable
 Sampled By:
 Company:

Project ID:
 Project Name:
 Project Location:
 LSD:
 P.O.:
 Proj. Acct. code:

Lot ID: **1866628**
 Control Number:
 Date Received: Dec 18, 2025
 Date Reported: Dec 23, 2025
 Report Number: 3223935
 Report Type: Final Report

Reference Number 1866628-3
Sample Date December 18, 2025
Sample Time 09:26
Sample Location
Sample Description RW 7-00/13 / 8.3 °C
Sample Matrix Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments	
Routine Water - Continued						
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	2.53	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	13.5	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	96	1		
Total Dissolved Solids	Extractable	mg/L	164	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-4
Sample Date December 18, 2025
Sample Time 09:08
Sample Location
Sample Description Reservoir "B" / 8.3 °C
Sample Matrix Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable					
Aluminum	Extractable mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable mg/L	0.00004	0.00002	0.006	Below MAC
Arsenic	Extractable mg/L	0.0005	0.0001	0.010	Below MAC
Barium	Extractable mg/L	0.011	0.0001	2.0	Below MAC
Boron	Extractable mg/L	0.015	0.002	5	Below MAC
Cadmium	Extractable mg/L	0.00002	0.00001	0.007	Below MAC
Chromium	Extractable mg/L	0.00013	0.00005	0.05	Below MAC
Copper	Extractable mg/L	0.026	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable mg/L	0.00004	0.00001	0.005	Below MAC
Selenium	Extractable mg/L	0.0004	0.0002	0.05	Below MAC
Strontium	Extractable mg/L	0.14	0.0001	7.0	Below MAC
Uranium	Extractable mg/L	0.00007	0.00001	0.02	Below MAC
Vanadium	Extractable mg/L	0.00048	0.00005		
Zinc	Extractable mg/L	0.0040	0.0005	5.0	Below AO
Microbiological Analysis					
Total Coliforms	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate MPN/mL	48.0	2		
Physical and Aggregate Properties					
Colour	True	Colour units	<5	5	
Turbidity		NTU	0.23	0.1	
Routine Water					
pH		6.86	0.01	7.0-10.5	Below Recommended Range
pH - Holding Time		Exceeded			
Temp. of observed pH		°C	20.6		
Electrical Conductivity	at 25 °C	µS/cm	337	1	
Calcium	Extractable	mg/L	34	0.01	
Iron	Extractable	mg/L	0.006	0.004	0.1
Magnesium	Extractable	mg/L	8.3	0.02	
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO, 0.12 MAC
Potassium	Extractable	mg/L	2.2	0.04	
Silicon	Extractable	mg/L	9.3	0.005	
Sodium	Extractable	mg/L	13	0.1	200
T-Alkalinity	as CaCO3	mg/L	55	5	
Chloride	Dissolved	mg/L	50.9	0.05	250

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-4
Sample Date December 18, 2025
Sample Time 09:08
Sample Location
Sample Description Reservoir "B" / 8.3 °C
Sample Matrix Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments	
Routine Water - Continued						
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	1.99	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	18.6	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	120	1		
Total Dissolved Solids	Extractable	mg/L	195	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-5
Sample Date December 18, 2025
Sample Time 08:53
Sample Location
Sample Description 2464 Sunnyside Pl. / 8.3 °C
Sample Matrix Drinking Water

Sample Matrix			Drinking Water			
Analyte		Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable	mg/L	0.00003	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0005	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.012	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.015	0.002	5	Below MAC
Cadmium	Extractable	mg/L	0.00002	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00014	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.0053	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable	mg/L	0.00034	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	0.0004	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.16	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00007	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	0.00046	0.00005		
Zinc	Extractable	mg/L	0.015	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate	MPN/mL	4.0	2		
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.24	0.1		
Routine Water						
pH			6.84	0.01	7.0-10.5	Below Recommended Range
pH - Holding Time			Exceeded			
Temp. of observed pH		°C	20.5			
Electrical Conductivity	at 25 °C	µS/cm	380	1		
Calcium	Extractable	mg/L	38	0.01		
Iron	Extractable	mg/L	0.019	0.004	0.1	Below AO
Magnesium	Extractable	mg/L	9.2	0.02		
Manganese	Extractable	mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable	mg/L	2.0	0.04		
Silicon	Extractable	mg/L	9.2	0.005		
Sodium	Extractable	mg/L	15	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	56	5		
Chloride	Dissolved	mg/L	60.8	0.05	250	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-5
Sample Date December 18, 2025
Sample Time 08:53
Sample Location
Sample Description 2464 Sunnyside Pl. / 8.3 °C
Sample Matrix Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments	
Routine Water - Continued						
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	1.88	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	20.2	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	132	1		
Total Dissolved Solids	Extractable	mg/L	212	1	500	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
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Project ID:
Project Name:
Project Location:
LSD:
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Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number 1866628-6
Sample Date December 18, 2025
Sample Time 08:40
Sample Location
Sample Description 32350 Diamond Cres. / 8.3 °C
Sample Matrix Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments
Metals Extractable					
Aluminum	Extractable mg/L	<0.001	0.001	0.1 OG, 2.9 MAC	Below OG
Antimony	Extractable mg/L	0.00003	0.00002	0.006	Below MAC
Arsenic	Extractable mg/L	0.0005	0.0001	0.010	Below MAC
Barium	Extractable mg/L	0.011	0.0001	2.0	Below MAC
Boron	Extractable mg/L	0.012	0.002	5	Below MAC
Cadmium	Extractable mg/L	0.00001	0.00001	0.007	Below MAC
Chromium	Extractable mg/L	0.00017	0.00005	0.05	Below MAC
Copper	Extractable mg/L	0.0035	0.0005	1 AO, 2 MAC	Below AO
Lead	Extractable mg/L	0.00034	0.00001	0.005	Below MAC
Selenium	Extractable mg/L	0.0003	0.0002	0.05	Below MAC
Strontium	Extractable mg/L	0.12	0.0001	7.0	Below MAC
Uranium	Extractable mg/L	0.00003	0.00001	0.02	Below MAC
Vanadium	Extractable mg/L	0.00045	0.00005		
Zinc	Extractable mg/L	0.010	0.0005	5.0	Below AO
Microbiological Analysis					
Total Coliforms	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Heterotrophic Count - Aerobic	SimPlate MPN/mL	8.0	2		
Physical and Aggregate Properties					
Colour	True Colour units	<5	5		
Turbidity	NTU	0.23	0.1		
Routine Water					
pH		6.85	0.01	7.0-10.5	Below Recommended Range
pH - Holding Time		Exceeded			
Temp. of observed pH	°C	20.9			
Electrical Conductivity	at 25 °C µS/cm	320	1		
Calcium	Extractable mg/L	33	0.01		
Iron	Extractable mg/L	0.011	0.004	0.1	Below AO
Magnesium	Extractable mg/L	7.2	0.02		
Manganese	Extractable mg/L	<0.001	0.001	0.02 AO, 0.12 MAC	Below AO
Potassium	Extractable mg/L	2.0	0.04		
Silicon	Extractable mg/L	9.5	0.005		
Sodium	Extractable mg/L	12	0.1	200	Below AO
T-Alkalinity	as CaCO3 mg/L	47	5		
Chloride	Dissolved mg/L	50.8	0.05	250	Below AO

Analytical Report

Bill To: Clearbrook Waterworks District
2889 Grandview Crescent
Abbotsford, BC, Canada
V2T 2R6
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1866628**
Control Number:
Date Received: Dec 18, 2025
Date Reported: Dec 23, 2025
Report Number: 3223935
Report Type: Final Report

Reference Number: 1866628-6
Sample Date: December 18, 2025
Sample Time: 08:40
Sample Location:
Sample Description: 32350 Diamond Cres. / 8.3 °C
Sample Matrix: Drinking Water

Analyte	Units	Result	Nominal DL	Guideline Limit	Guideline Comments	
Routine Water - Continued						
Fluoride	Dissolved	mg/L	<0.01	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	2.49	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1.0	Below MAC
Sulfate (SO4)	Dissolved	mg/L	15.0	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	113	1		
Total Dissolved Solids	Extractable	mg/L	185	1	500	Below AO

Approved by:



Rachel Eden, B. Sc.
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Clearbrook Waterworks District	Project ID:	Lot ID: 1866628
2889 Grandview Crescent	Project Name:	Control Number:
Abbotsford, BC, Canada	Project Location:	Date Received: Dec 18, 2025
V2T 2R6	LSD:	Date Reported: Dec 23, 2025
Attn: Accounts Payable	P.O.:	Report Number: 3223935
Sampled By:	Proj. Acct. code:	Report Type: Final Report
Company:		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (BC)	APHA	* Alkalinity - Titration Method, 2320 B	Dec 19, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* Conductivity, 2510 B	Dec 19, 2025	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	* pH - Electrometric Method, 4500-H+ B	Dec 19, 2025	Element Vancouver
Anions by IEC in water (VAN)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	Dec 19, 2025	Element Vancouver
Heterotrophic (Standard) Plate Count (Aerobic SP) - VAN	APHA	Enzyme Substrate Method, 9215 E	Dec 18, 2025	Element Vancouver
Metals SemiTrace (Extractable) in water (VAN)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	Dec 19, 2025	Element Vancouver
Total and E-Coli - Colilert - DW (VAN)	APHA	Enzyme Substrate Test, APHA 9223 B	Dec 18, 2025	Element Vancouver
Trace Metals (extractable) in Water (VAN)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Dec 19, 2025	Element Vancouver
True Color in water (VAN)	APHA	* Spectrophotometric - Single Wavelength Method, 2120 C	Dec 19, 2025	Element Vancouver
Turbidity - Water (VAN)	APHA	* Turbidity - Nephelometric Method, 2130 B	Dec 18, 2025	Element Vancouver

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Guidelines

Guideline Description	Health Canada GCDWQ
Guideline Source	Guidelines for Canadian Drinking Water Quality, Health Canada, August 2024
Guideline Comments	MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guideline for Water Treatment Plants (does not apply to private groundwater wells). Refer to Health Canada for complete guidelines at www.hc-sc.gc.ca

Comments:

- The analysis of water samples 1866628-1,2,3,4,5 are below Maximum Acceptable Concentrations for the chemical and bacteriological health related guidelines specified by the March 2025 Guidelines for Canadian Drinking Water Quality for the parameters tested.

The comparison of test results to guideline limits is provided for information purposes only. This is not to be taken as a statement of conformance / nonconformance to any guideline, regulation or limit. The data user is responsible for all conclusions drawn with respect to the data and is advised to consult official regulatory references when evaluating compliance.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



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