

Ruskin Townsite Water System

Annual Report 2023



EXECUTIVE SUMMARY

The Ruskin Townsite is located within the City of Mission and is located on the unceded, ancestral, and shared territory of the Stó:lō Peoples, specifically on Leq'á:mel, Semá:th, Máthexwi, Kwantlen, Sq'éwlets, and Katzie traditional territories in the lower mainland of BC. Nestled on the southern coastal mountain slopes overlooking the lush Fraser River Valley, Mission is a rapidly growing and dynamic community of approximately 41,500 residents, 20 kilometers north of the US border and 70 kilometers east of Vancouver. Although Mission is part of a broader metropolitan area, it still maintains its distinct and welcoming small-town flavor.

The City of Mission provides potable drinking water for the Ruskin Townsite Water System 0712597 drawn from Hayward Lake. The Hayward Lake source water is filtered (with 10- and 5-micron filters), treated with ultraviolet (UV) disinfection and chlorination with a sodium hypochlorite injection prior to distribution.

In 2023, the Ruskin Townsite Drinking Water System continued to deliver high quality water, within the limits recommended by the Guidelines for Canadian Drinking Water Quality (GCDWQ).

Hayward Lake's raw water is tested every three years with a full chemical analysis directed by the Drinking Water Officer (DWO). The results are provided in these reports when completed. Hayward Lake's raw water quality was within these requirements.

The Ruskin Townsite tested 51 treated water samples for microbiological parameters in 2023 as shown in Appendix A.

The City of Mission Staff continue to work closely with Fraser Health Authority and the Drinking Water Officer to maintain safe drinking water for the Ruskin Townsite Water System.

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1 INTRODUCTION

The British Columbia Drinking Water Protection Act requires that all water suppliers produce an annual water quality report. The report is reviewed by City employees and the local Drinking Water Officer for compliance and published for public access. This report has been prepared for the City of Mission's Ruskin Townsite Water System and Fraser Health and will be posted on The City of Missions website for water users to review.
<https://www.mission.ca/city-hall/departments/engineering/water/waterquality/>

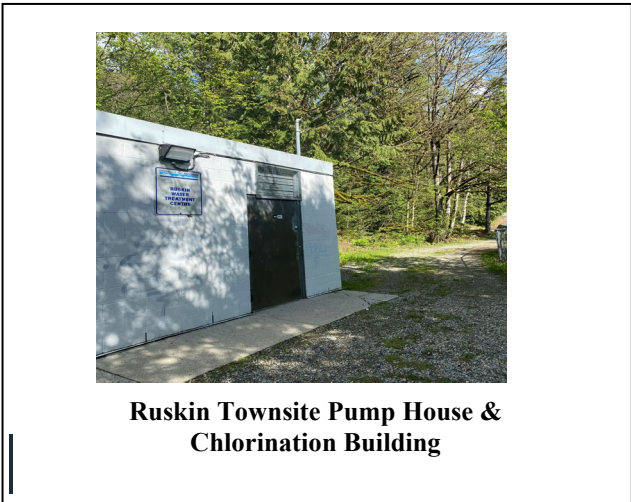
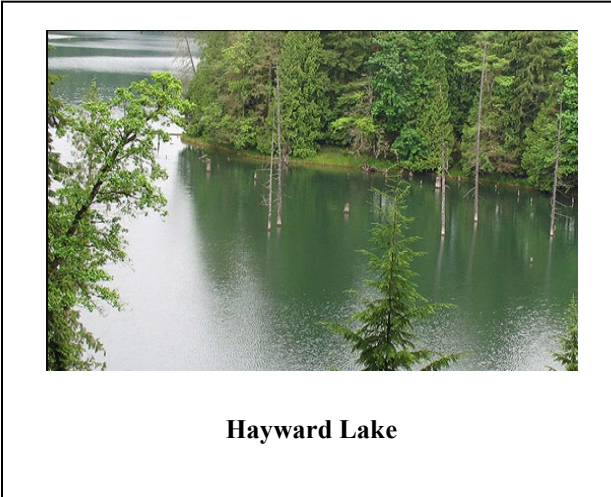
2 WATER SYSTEM DESCRIPTION

The water supply for the Ruskin Townsite Water System is drawn from twin intakes using submersible pumps in Hayward Lake. The water from Hayward Lake receives filtration and disinfection in the following treatment process.

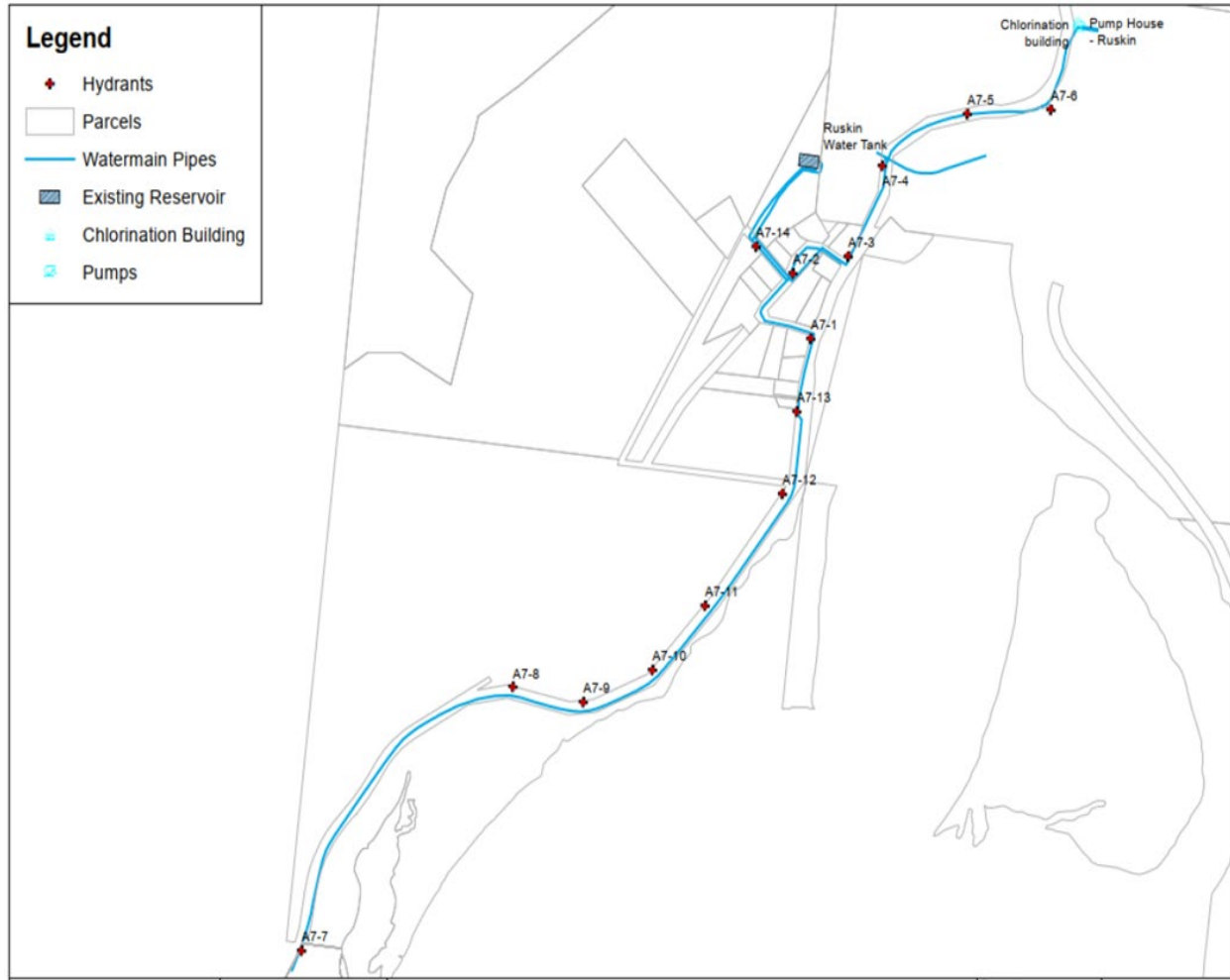
- Primary filtration by 10-micron absolute, stainless steel self-cleaning filters.
- Secondary filtration by 5-micron absolute washable/disposable cartridge filters.
- Primary disinfection, 2 bank ultraviolet light units.
- Secondary disinfection, automatic injection of sodium hypochlorite solution.

After primary and secondary treatment, the treated water is then piped and stored approximately 1 km to a 170,000-litre water tank. The water in the tank is distributed to approximately 13 homes in the Ruskin Townsite area and provides water to the BC Hydro Dam offices and the Ruskin Trailer Court at 9960 and 9970 Wilson Street. There currently are approximately 270 residents served by the Ruskin Townsite Water System' treated potable water.

2.1 Water Sources & Treatment



2.2 Distribution System



2.3 Monitoring and Sampling Program

The City of Mission monitors The Ruskin Townsite drinking water quality according to the requirements of the BC Drinking Water Protection Act and Guidelines for Canadian Drinking Water Quality (GCDWQ). The City of Mission monitors source water quality and the distribution system water quality to confirm effective water treatment and disinfection.

The table below summarizes the monitoring program.

Parameters	Raw Surface Water	Treated Water	Monitoring Progress
Full Chemical Analysis	Every 3 Years	Every 3 Years	To review water quality and track any possible changes in water quality.
Turbidity & Ultraviolet Transmittance (UVT)	Real Time Monitoring	Real Time Monitoring	Receive necessary information required for control of the water treatment process.
E. Coli & Total Coliform	Every 3 Years	Weekly	To proactively screen for possible contamination of the distribution system.
THM's & HAA's		Quarterly	To monitor and confirm MAC is not being exceeded.
Disinfection Monitoring		Real Time Monitoring	To proactively screen for biological contamination of the distribution system.

The City of Mission sampled the Ruskin Townsite Water System on 50 separate occasions in 2023. The sampling frequency occurs one sample per week or four to five times a month. All sampling dates and results received are shown on the Sample Range Reports shown on Appendix A.

3 SYSTEM OPERATIONS

The City of Mission has staff assigned to engineering, operations management, maintenance, and light construction for the Ruskin Townsite Water System. These team members maintain the quality of the water throughout the distribution system, The City of Mission has operational and maintenance programs scheduled through the years as shown in section 3.2 and 3.3. Operational upgrades are identified through system studies, inspection reports and facility inspection reports completed with Fraser Health and the DWO. In 2023, a Ruskin Townsite facility's inspection was completed with the DWO on May 31, 2023.

3.1 Staff Certification & Training

The City of Mission maintains a high level of education and training for the operators of the water system. The BC Environmental Operators Certification Program (EOCP) classifies water systems and certifies operators using ratings of 1 through 4. Higher numbers correspond to greater operational complexity and operators with more advanced training. The BC Drinking Water Protection Act requires that water system owners employ operators with a certification level numerically equivalent to the classification of the water system.

The City of Mission's team consists of 15 operators with varying degrees of training in water distribution and water treatment. Eight operators have level 2 certification and 2 operators have Level 4 certification. Currently the Ruskin Townsite Water System is classified as a Small Water System.

3.2 Operational Highlights and Annual Maintenance for 2023

In 2023 the City of Mission achieved the following significant works:

- Hach Annual Service of Inline Turbidimeters
- New water quality testing field equipment
- Onsite meeting with Drinking Water Officer
- UV Lamp Replacement (March)
- Replacement of uninterrupted power supply (April)
- Lake Intake/Pump Inspection (completed May 2023)
- Reservoir Cleaning and Inspection (completed May 2023)

3.3 Works Planned for 2024

Key water system projects scheduled for 2024 include the following:

- Alternate Source Water Replacement Survey and Report
- Reservoir Hatch Replacement
- Pump House roof replacement

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- SCADA system and server upgrades
- Source relocation

3.4 Water Quality Complaints

Ruskin Townsite received 1 water quality complaint at 9950 Wilson Street on June 09, 2023. City of Mission's crew tested 0.49 MG/L Free Chlorine, 1.36 NTU inside the park. Water quality at the sampler at 0.85 MG/L Free Chlorine and 1.66 NTU. Likely issue within the park.

3.5 Emergency Response

The Ruskin Townsite Water System Emergency Response Procedures Manual was created in 2009. The Emergency Response Plan (ERP) has been created to identify potential hazards to name a few, Loss of Raw Water Intake, Loss of Primary Disinfection, Illegal Entry/Vandalism at Ruskin Facility, Major Loss of Electrical Power. The ERP outlines processes taken during and Emergency incident.

Activation of the ERP occurs when an emergency incident is identified from staff, police/fire, media or the public. City of Mission crews are dispatched to the location, the incident is isolated depending on the type of emergency. The ERP is activated following the response process with actions required and the responsibilities of each team member. The ERP identifies department organizational charts and emergency contact lists for quick deployment of key stakeholders in an emergency situation.

Digital copies of the ERP are filed on the City's server for the appropriate staff to review. Hard copies of the ERP are available at The City of Mission's Public Works Division, 33835 Dewdney Trunk Road. The ERP is reviewed and updated annually and has been revised April 2023.

4 CONCLUSIONS

Water quality monitoring for 2023 shows that the drinking water for The Ruskin Townsite is potable under the definition of the Drinking Water Protection Act & Regulation. The City monitors and maintains the Ruskin Townsite Water System throughout the year to preserve public health and the environment by meeting all regulatory requirements. The City of Mission works closely with Fraser Health Authority and the Drinking Water Officer to provide aesthetically-pleasing, clean, and a safe source of drinking water for all to enjoy.

5 CORRESPONDANCE

The annual Sample Range Report provided by Fraser Health summarizes Ruskin Townsite's Water System bacteriological results for 2023. Fraser Health has recently revised its metals at the tap "Flush" message and has asked to include for users. City of Mission is taking steps forward in developing and implementing a cross connection control program.

5.1 Metals in Drinking Water- "Flush" Message from Fraser Health

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February 1, 2024

Water System Operators

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

Fraser Health has recently revised its metals at the tap “Flush” message and we are asking all water systems to please include the following health message with your next annual reports to your users.

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.

Sincerely,

Drinking Water Program
Fraser Health Authority
HPLand@fraserhealth.ca

Fraser Health Authority
Health Protection

Suite 400 2777 Gladwin Rd
Abbotsford BC
V2T 4V1 Canada

Tel (604) 870-7900
Fax (604) 852-1558
www.fraserhealth.ca

5.2 Sample Range Report

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Sample Range Report

Fraser Health Authority

Facility Name: Ruskin Townsite Water System
Date Range: Jan 1 2023 to Dec 31 2023

Operator Colin McLean
 PO Box 20
 Mission, BC V2V 4L9

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Ruskin Townsite - Standpipe, Wilson Rd.</u>				
	1-4-2023 12:50:00 PM	QRWRT	QRWRT	
	1-10-2023 11:30:00 AM	LT1	LT1	
	1-18-2023 12:50:00 PM	LT1	LT1	
	1-25-2023 9:00:00 AM	LT1	LT1	
	1-31-2023 8:45:00 AM	LT1	LT1	
	2-8-2023 12:25:00 PM	LT1	LT1	
	2-15-2023 12:30:00 PM	LT1	LT1	
	2-22-2023 1:15:00 PM	LT1	LT1	
	3-1-2023 10:40:00 AM	LT1	LT1	
	3-8-2023 12:40:00 PM	LT1	LT1	
	3-14-2023 11:15:00 AM	LT1	LT1	
	3-22-2023 9:00:00 AM	LT1	LT1	
	3-29-2023 12:00:00 PM	LT1	LT1	
	4-5-2023 12:20:00 PM	LT1	LT1	
	4-12-2023 11:45:00 AM	LT1	LT1	
	4-19-2023 12:10:00 PM	LT1	LT1	
	4-26-2023 12:00:00 PM	LT1	LT1	
	5-3-2023 12:10:00 PM	LT1	LT1	
	5-10-2023 1:10:00 PM	LT1	LT1	

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5-17-2023 12:50:00 PM	LT1	LT1
5-24-2023 11:30:00 AM	LT1	LT1
5-30-2023 10:30:00 AM	LT1	LT1
6-7-2023 12:40:00 PM	LT1	LT1
6-14-2023 12:00:00 PM	LT1	LT1
6-21-2023 11:40:00 AM	LT1	LT1
6-27-2023 9:00:00 AM	LT1	LT1
7-5-2023 12:30:00 PM	LT1	LT1
7-12-2023 12:45:00 PM	LT1	LT1
7-18-2023 9:30:00 AM	LT1	LT1
7-26-2023 12:30:00 PM	LT1	LT1
8-2-2023 11:30:00 AM	LT1	LT1
8-9-2023 11:30:00 AM	LT1	LT1
8-15-2023 12:30:00 PM	LT1	LT1
8-30-2023 12:30:00 PM	LT1	LT1
9-6-2023 12:45:00 PM	LT1	LT1
9-12-2023 8:15:00 AM	LT1	LT1
9-20-2023 12:30:00 PM	LT1	LT1
9-27-2023 1:10:00 PM	LT1	LT1
10-3-2023 12:00:00 PM	LT1	LT1
10-11-2023 12:30:00 PM	LT1	LT1
10-18-2023 12:40:00 PM	LT1	LT1
10-25-2023 12:45:00 PM	LT1	LT1
11-1-2023 12:50:00 PM	LT1	LT1
11-8-2023 12:55:00 PM	LT1	LT1
11-15-2023 1:10:00 PM	LT1	LT1
11-22-2023 11:50:00 AM	LT1	LT1
11-29-2023 12:45:00	LT1	LT1

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PM			
12-6-2023 10:40:00	LT1	LT1	
AM			
12-13-2023 12:45:00	LT1	LT1	
PM			
12-20-2023 12:30:00	<u>LT1</u>	<u>LT1</u>	
PM			
Total Positive:	0	0	0

Reservoir

5-30-2023			
8-23-2023 12:15:00	<u>LT1</u>	<u>LT1</u>	
PM			
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:	52		

Comments:

Environmental Health Officer
Jan 25 2024

FOR FURTHER INFORMATION PLEASE CALL: David Fowler

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5.3 Cross Connection Control Program Progress Report



Save As

ENVIRONMENTAL HEALTH SERVICES

CROSS CONNECTION CONTROL PROGRAM PROGRESS REPORT

Contact Information		
Water Supplier	Ruskin Townsite Water System	Date Contacted
Location / Municipality	City of Mission	Department
Contact Name	Colin McLean	Phone Number
		604-425-3681
		Cell Number
		236-887-1234
		Email
		cmclean@mission.ca

Program Overview		
1. CCC Program (CCCP) in place	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes, date CCCP implemented (dd/mm/yyyy) _____
2. Implementation of CCCP under consideration/ development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, proposed CCCP implementation date (dd/mm/yyyy) _____
3. Discussed adding CCCP as a Term & Condition to Operating Permit	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

CCC Program Details		
1. CCC Bylaw adopted	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Under Development	
2. CCC Policy or SOP Manual	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Under Development	
3. Municipal System Facilities Assessed	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> In Progress	
4. Municipal System Facilities Compliant	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> In Progress	
5. Total number of I.C.I. Accounts		<u>2</u>
6. Number of I.C.I. Accounts Surveyed for Cross Connections		<u>1</u>
7. Number of I.C.I. Compliant Facilities (meets minimum CCCP requirements)		<u>1</u>
8. Total number of Backflow Preventers Tracked		<u>2</u>
9. Annual Test Records Available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
10. Facility Hazard Assessment Survey Records Available	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11. Residential Connections Protected from Backflow	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Notes

In 2023 discussions have begun, and money has been allocated to create a Cross Connection Control Program for the City of Mission Distribution System as well as Ruskin Townsite Water System.

At this time the City of Mission is at a beginning stage of development. Currently we have three Operators certified in back flow prevention, and look forward to seeing this program take shape over the next couple years.

Source: MTS