

VILLAGE OF radium hot springs

Village of Radium Hot Springs Annual Drinking Water Report 2025



Introduction

The Village of Radium Hot Springs (“Village”) is the purveyor of potable drinking water to the users connected to the community water system. This report provided in fulfillment of the Village’s obligations under the provincial Drinking Water Protection Act and associated regulations, as well as the terms and conditions of the Village’s Water System Operating Permit. Enforcement of the regulations and issuance of water system permits are the responsibility of the Interior Health Authority.

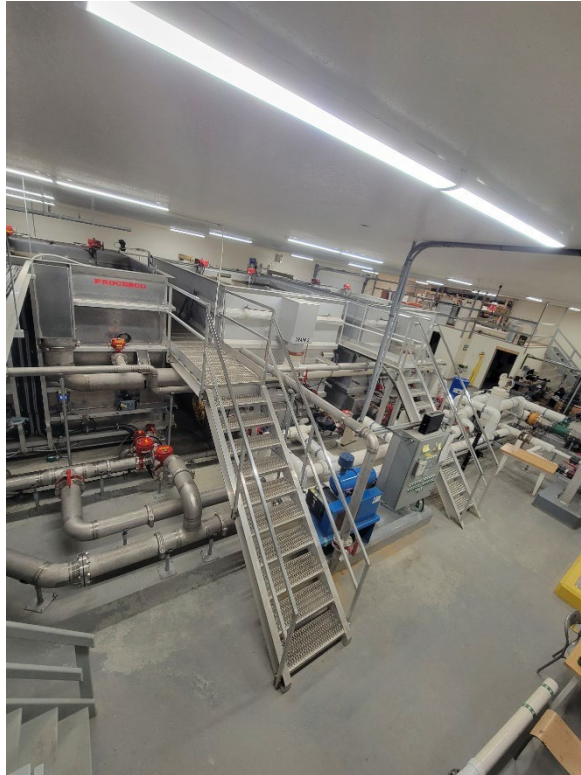
Village of Radium Hot Springs Water System

The Village’s main source of water is taken from Forsters Creek. It travels approximately 13 kms to the 5km on the Horsethief Creek Service Road, where it enters a large settling pond. After the water travels through the settling pond, it goes through a screen and moves 1 km to the water treatment plant where it undergoes filtration to remove the “rock flour/sediment from the water. The water filtration plant was originally built in 1999 and has had several updates since it was first commissioned.

Water Filtration Train

Individual processes are arranged in a “Treatment Train” or “Train” (a series of processes applied in sequence). The most commonly used treatment processes include filtration, flocculation and sedimentation, and disinfection of surface water. The Village operates 3 Trains, each containing 2 filtration devices. The newest Train was installed in 2021 to help overcome high demand and support the system during high turbidity events. It is a dual media filter which consists of two layers and underdrains. The other two Trains are multimedia filters consisting of 5 layers before the underdrains. Water passes through the filters, which moves the remaining sediment from the water.

After filtration, the water then flows to UV reactors where the water is exposed to UV light which deactivates any pathogens that may have made it through filtration. After exposure to the UV light, 12% Sodium Hypochlorite is added to the water for a long-lasting residual disinfectant. After mixing through the baffles to mix the chlorine, the water then enters two 1,940 m³ reservoirs for distribution to the Village.



Water Treatment Train



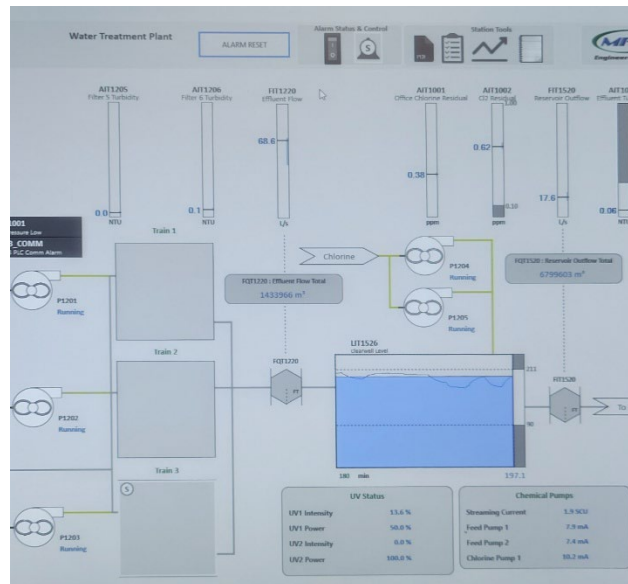
UV Reactor

Distribution System

After treatment, the water travels via gravity, 4km through underground pipes into The Village. The water flows through 33 km of underground mains and goes through 3 pressure reducing valves to bring down the pressure, and one booster pump to regulate pressure and flow, in case of fire at a higher elevation location. (Radium's population is 1,339, according to the latest Census and has 780 Service Connections).

Monitoring

The Village personnel check the operations, the quality and other parameters daily. Critical elements are monitored via a system called SCADA (Supervisory Control and Data Acquisition). SCADA allows the monitoring from a centralized location, gathers information, watches real time processes such as flow, chlorine residual, pressure, equipment, and reservoir levels. If there is a problem, an alarm will be sent out to Village employees to check into the alarm situation for rectification, no matter what day or time it is.



SCADA

Water Quality Control Program

Village staff does an annual full spectrum chemical sampling each April. These samples are sent to an independent accredited laboratory for testing. Details from this test can be found attached to the end of this report. This report shows that the Village is well within Federal and Provincial guidelines.

Weekly, Village staff take 3 samples from the northern sampling stations or the southern sampling stations on alternating weeks. These samples are sent away to an accredited laboratory to be tested for a Total Coliforms and Escherichia coli (E. coli). Based on population the Village is required to do 2 tests a week, but to better protect the public an extra sample is taken each week.

Should there be any indication of Coliform presence, Interior Health Authority and Village staff will be notified immediately, and procedures will be put into effect to protect the community water supply, and to find the possible source of contamination. Total Coliform testing quality: Coliforms, being easier to detect, are used to indicate that the presence of other pathogenic organisms may be present in the water.

More than 156 samples were sent out for analysis in 2025. No samples came back with a positive presence of E. Coli or Total Coliforms.

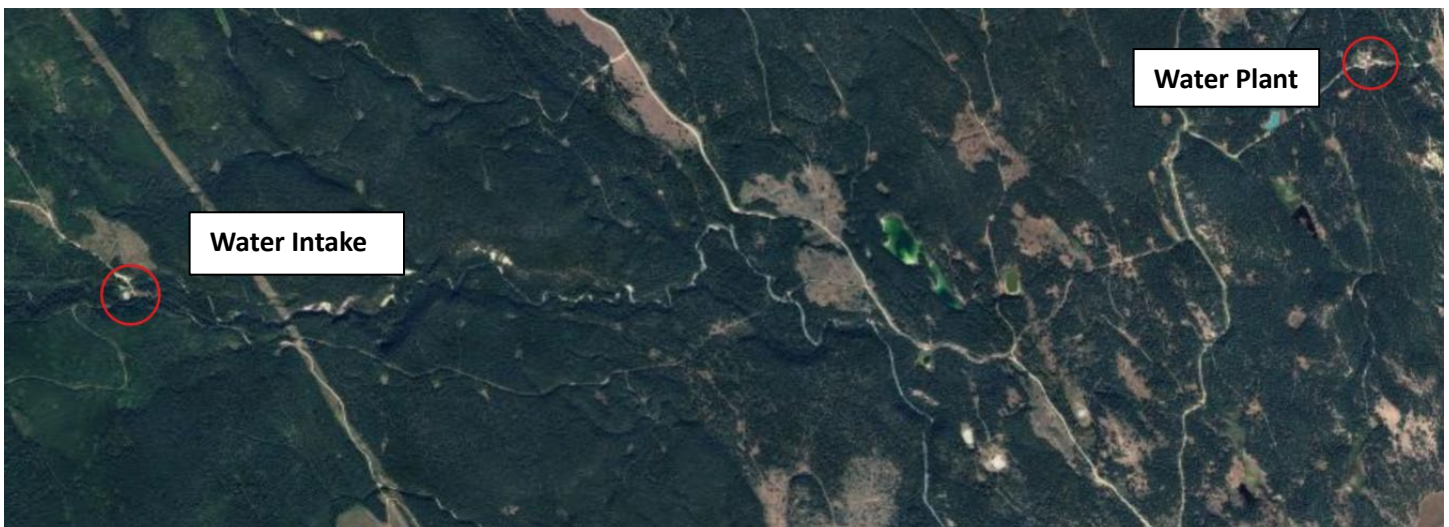
Projects and Repairs

May 28th, 2025, a contractor was retained to carry out annual maintenance on the pressure reducing valves located along the village main waterline.

In September 2025 repairs were made to a residential service line at the curb cock, once repaired the line was flushed and but back into service.

Maintenance

During the winter months, Village Staff cleaned and inspected all the Trains. All chemical lines were replaced to avoid possible leaks along with the injectors. All automated valves were taken apart, cleaned, inspected, and maintained.



Location of Water Intake Facility



Water Sample Station Locations - North

Radium - North



Water Sample Station Locations - South

Radium - South



 Sampling station with location



Village of Radium Hot Springs
Potable Water Analyses - May
2025

ABBREVIATIONS

mg/L	=	milligrams per liter (parts per million)
NTU	=	Nephelometric Turbidity Units, a measure of water clarity
AO	=	Aesthetic Objective
MAC	=	maximum Acceptable Concentration
MPN	=	Most Probable Number
OG	=	Operational Guideline (treated water)
<	=	Less than
>	=	Greater than or
≥	=	equal to
ALARA	=	As low as reasonably achievable

Water Quality
Parameter

RAW

TREATED

UNITS

**CANADIAN DRINKING
 WATER GUIDELINES (MAC)**

**Physical Tests (Matrix:
 Water)**

hardness (as CaCO ₃), from total Ca/Mg	128	96.7	mg/L	n/a
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Anions and Nutrients
(Matrix: Water)

fluoride	0.244	0.236	mg/L	1.5
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**Cyanides (Matrix:
 Water)**

cyanide, strong acid dissociable (total)	<0.0020	<0.0020	mg/L	0.2
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Total Metals (Matrix:
Water)

Water Quality Parameter	RAW	TREATED	UNITS	CANADIAN DRINKING
				WATER GUIDELINES (MAC)
aluminum, total	0.0494	0.150	mg/L	2.9
antimony, total	<0.00010	<0.00010	mg/L	0.0006
arsenic, total	0.00011	0.00010	mg/L	MAC .010 ALARA
barium, total	0.0367	0.0267	mg/L	2
boron, total	<0.010	<0.010	mg/L	2.4
cadmium, total	0.0000074	<0.0000050	mg/L	0.007
calcium, total	26.0	20.6	mg/L	n/a
chromium, total	0.00050	<0.00050	mg/L	0.05
copper, total	0.00147	<0.00050	mg/L	2
iron, total	0.111	<0.010	mg/L	AO: ≤ 0.3
lead, total	0.000481	<0.000050	mg/L	.005 ALARA
magnesium, total	15.2	11.0	mg/L	n/a
manganese, total	0.00686	0.00058	mg/L	0.12
mercury, total	<0.0000050	<0.0000050	mg/L	0.001
molybdenum, total	0.00686	0.00603	mg/L	n/a
potassium, total	1.23	0.985	mg/L	n/a
selenium, total	0.000186	0.000101	mg/L	0.05
sodium, total	264	2.87	mg/L	n/a 20 OG
strontium, total	0.136	0.110	mg/L	7
uranium, total	0.00646	0.00499	mg/L	0.02
zinc, total	0.0071	<0.0030	mg/L	AO ≤ 5.0

Client Sample ID	North 22 Sept 2025	North East 22 Sept 2025	North West 22 Sept 2025		South 08 June 2025	South East 08 June 2025	South West 08 June 2025
Date Sampled	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Water Quality Parameter							

Microbiological Tests
(Matrix: Water)

coliforms, total	<1	<1	<1	MPN/100mL	<1	<1	<1
coliforms, Escherichia coli [E. coli]	<1	<1	<1	MPN/100mL	<1	<1	<1

*Bacteriological testing for E. Coli and Total Coliforms are conducted weekly from various locations throughout the water distribution system, including 3 South and 3 North locations. All bacteriological samples taken during 2025 were analyzed as negative for both E. Coli and Total Coliform counts.

ALS Canada Ltd.



QUALITY CONTROL REPORT

Work Order	: CG2505879	Page	: 1 of 11
Client	: Village of Radium Hot Springs	Laboratory	: ALS Environmental - Calgary
Contact	: Public Works	Account Manager	: Patryk Wojciak
Address	: PO BOX 340 4836 Radium Blvd. Radium Hot Springs BC Canada V0A 1M0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ---	Telephone	: +1 403 407 1800
Project	: NEW WATER SOURCE (TREATED)	Date Samples Received	: 09-May-2025 08:45
PO	: ---	Date Analysis Commenced	: 09-May-2025
C-O-C number	: ---	Issue Date	: 16-May-2025 12:46
Sampler	: ---		
Site	: ---		
Quote number	: CG21-GMRA100-0001 Q83725		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
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