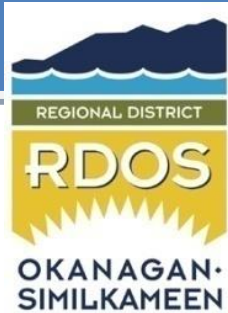
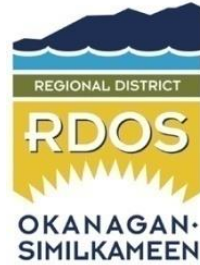


2021

ANNUAL WATER QUALITY MONITORING REPORT FAULDER WATER SYSTEM



Faulder Uranium Treatment System



**2021 ANNUAL WATER QUALITY MONITORING REPORT
FAULDER WATER SYSTEM
FAULDER, B.C.**

Copy prepared for:
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1. Introduction

As the owner and operator of the Faulder water system, the Regional District Okanagan-Similkameen is responsible for the following Annual Report summarizing the results from the 2021 *Water Quality Monitoring Program*. The report is a conditional requirement of the *Permit to Operate* issued by the Interior Health Authority (IHA) and the *BC Drinking Water Protection Act and Regulation*.

2. System Description

The Faulder water system is located within Electoral Area F, approximately ten kilometers west of Summerland. The water system consists of a primary and a backup deep groundwater well, a Uranium Treatment Plant, storage reservoir and a distribution system. The system supplies domestic water to approximately 80 connections, however it does not support fire protection. A portion of the well water (approximately 80%) is pumped through a uranium treatment system and blended with an untreated portion (approximately 20%) to achieve a uranium concentration below the Maximum Acceptable Concentration (MAC) of 0.02 mg/L total uranium. Water is then pumped into the distribution system and to an elevated storage reservoir. There is one Booster Zone in the system supplying water to the Upper Zone, a small subdivision at an elevation higher than the Reservoir.

3. System Classification and Operator Certifications

3.1. System Classification

The *British Columbia Environmental Operators Certification Program (BC EOCP)* is responsible for the classification of potable water systems in BC. The Faulder water system remained classified as a *Small Water System (SWS)* in 2021.

3.2. Operator Certification

The *British Columbia Environmental Operators Certification Program (BC EOCP)* is also responsible for certification of all water system operators. Operators may hold certification(s) in the disciplines of *Water Distribution* and/or *Water Treatment* with four levels of certification achievable within each discipline. RDOS Operators annually attend courses, seminars and complete online training required to maintain their levels of certification. In addition, all operators annually continue to work on augmenting and furthering their levels of certification. All RDOS Operators are certified through the BC EOCP as indicated in the table below.

OPERATOR EOCP CERTIFICATION No.	WATER DISTRIBUTION CERTIFICATION LEVELS				WATER TREATMENT CERTIFICATION LEVELS			
	IV	III	II	I	IV	III	II	I
1162	X						X	
4194			X					
4840			X				X	
4839		X						X
6926			X					X
8761			X					X
9322		X						X

Table 1: RDOS Operator Certifications 2021

4. Annual Water Usage

The source water for the Faulder water system is a deep groundwater well. In 2021, a total of 48,110 m³ of water was pumped from the Faulder well up from 40,803 m³ in 2020.

4.1. Annual Water Usage

	Cubic Meters (m ³)	US Gallons	Date
Annual Total Usage	48,110	12,709,317	
Minimum Daily Flow	34	8,982	Nov 25/21
Maximum Daily Flow	516	136,313	Jul 01/21

Table 2: Annual Water Consumption 2021

Both annual and monthly water consumption has been trended as shown in the following two graphs.

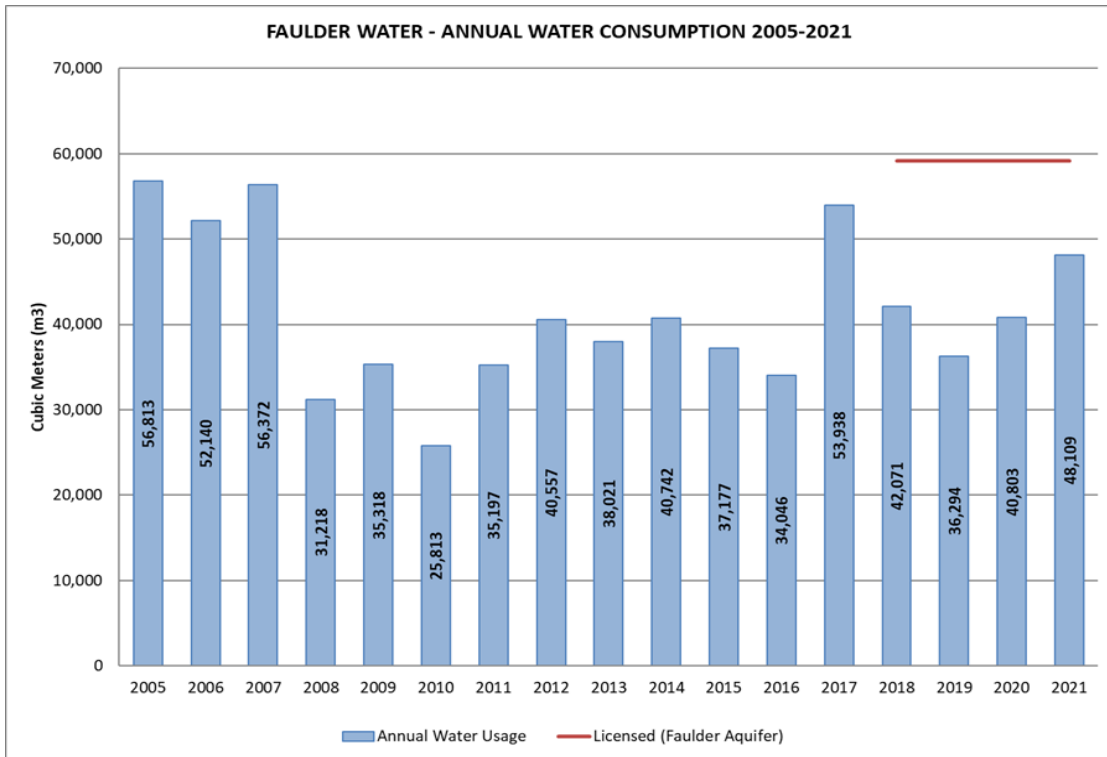


Figure 1: Annual Water Consumption 2005 to 2021

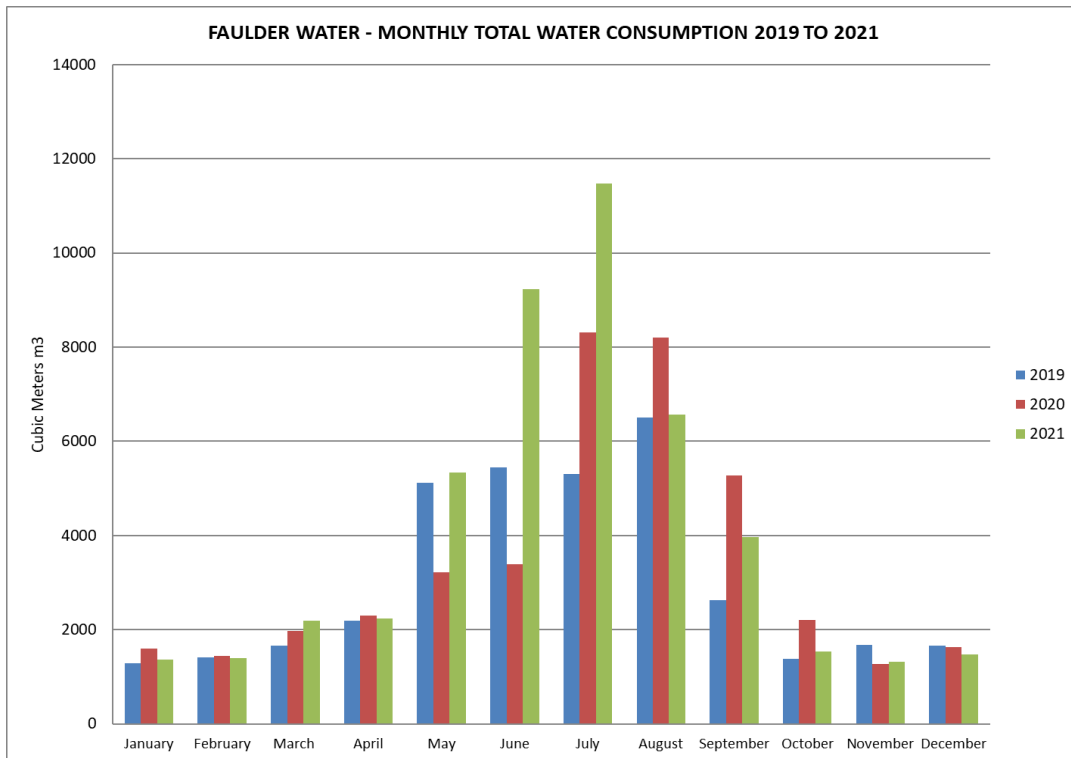


Figure 2: Monthly Water Consumption 2019 to 2021

4.2. Water Conservation

The Faulder system started under Stage “Normal” for water conservation in 2021. There were however periods of increased water demand such as during the “Heat Dome” at the end of June, when the water usage was exceeding the well supply capacity for the system. As a result, well pump operated for an extended period of time while the water level in the storage reservoir continued to drop, as shown in the trend below. Additional messaging was utilized during these times encouraging residence to be cognisant of their water usage and to conserve wherever possible. With the continued heat, by the end of July the decision was made to move all RDOS water systems to Stage 1, which limited watering to two days per week.

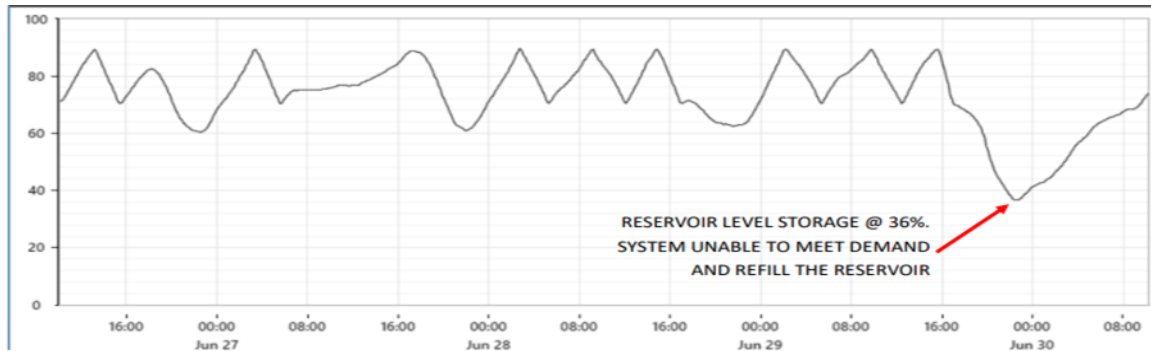


Figure 3: Faulder Reservoir trend during “Heat dome” end of June 2021

5. Aquifer Monitoring

The Faulder wells draw water from the Meadow Valley aquifer. Recharge into the Faulder section of the aquifer declined annually in 2019 through 2021 compared to 2018. The static water level has declined approximately 7 meters over the past 4 years.

The measured recharge into the Faulder aquifer was minimal in 2021.

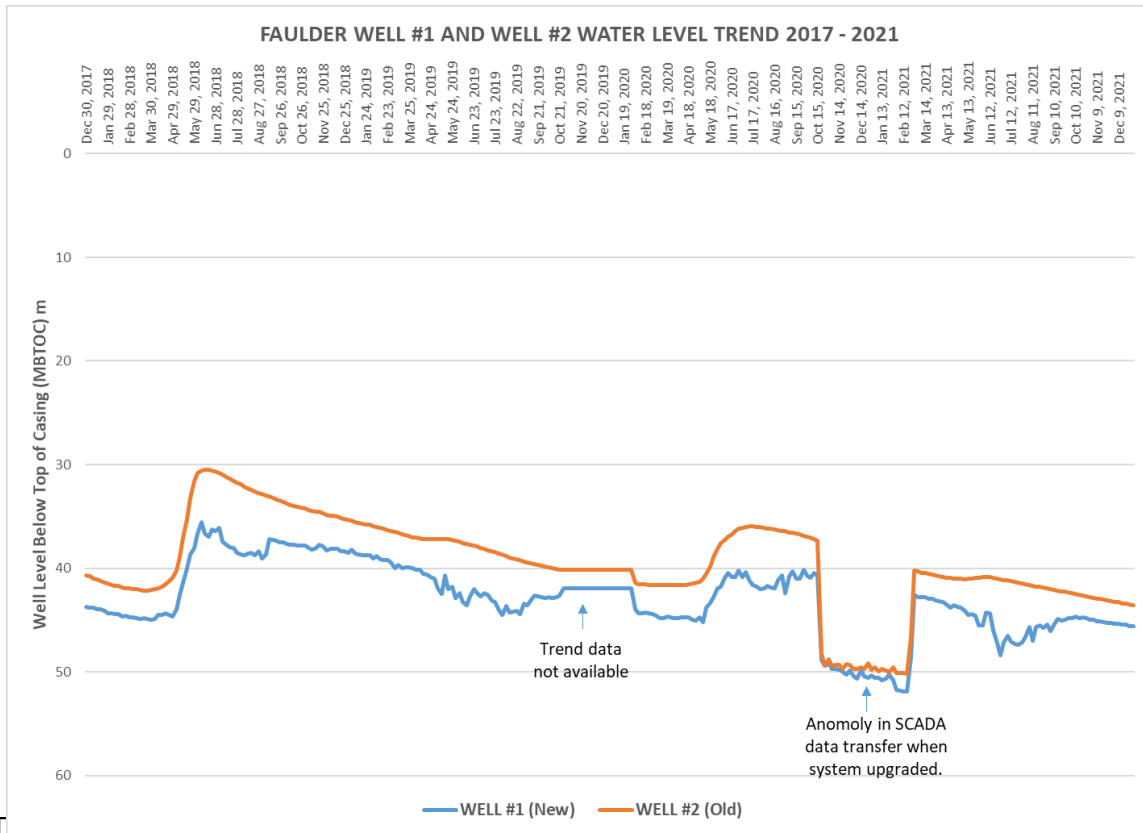


Figure 4: Faulder Aquifer Level 2017 to 2021 Trend

6. Source Water Quality

All untreated source water quality parameters are compared to the *British Columbia Drinking Water Protection Act and Regulation (DWPA)* and the *Guidelines for Canadian Drinking Water Quality (GCDWQ)* unless otherwise noted, which could be indicated as an Operational Guideline (OG). The *DWPA* and *GCDWQ* define these parameters and set Aesthetic Objectives (AO) and Maximum Acceptable Concentrations (MAC).

All accredited laboratory tests in 2021 were performed by Caro Analytical Services (Kelowna, B.C.).

6.1. Source Water Bacteriological Results

Typically, bacteriological samples are only collected annually from Faulder’s untreated groundwater well. However in 2021, two additional bacteriological samples were collected from Well #1 as investigative measures into overgrown colonies detected once in the uranium treatment system and distribution samples. Section 7.1 elaborates on this occurrence. Both Total Coliforms and *E. coli* were not detected in samples collected from the untreated Faulder groundwater well, as tabulated below.

Analyte	Unit	Average	Minimum	Maximum	Number of Results	Number of Results with Exceedances
Lab Results: Microbiological						
E. coli (counts)	CFU/100 mL	<1	<1	<1	3	0
Total coliforms (counts)	CFU/100 mL	<1	<1	<1	3	0

Table 3: Faulder Well Bacteriological Testing 2021 Summary

6.2. Source Water Potable Water Testing

Annually, the RDOS submits a sample of the untreated well water to an accredited lab for comprehensive potable water testing. The results of these test are compared against the *Guidelines for Canadian Drinking Water Quality*. The *GCDWQ* establishes Maximum Acceptable Concentration (MAC), Interim Maximum Acceptable Concentrations (IMAC) and Aesthetic Objectives (AO) for parameters if applicable. In 2021, with the exception of uranium, there were no exceedances of the guidelines in the Faulder groundwater well annual sample.

This comprehensive test includes physical parameters (e.g. color, turbidity, temperature, ultraviolet transmittance), chemical parameters (e.g. hardness, total metals and nutrients). Changes in these parameters may result in the need for water notifications for customers (i.e. Boil Water Notice or Water Quality Advisory) or the requirement for treatment processes to be implemented. The following tables display the results for the respective comprehensive potable water tests along with summaries of the previous three (3) years of data for comparison

6.2.1. Source Water General Potability Parameters 2021

Analyte	Unit	Guideline		Faulder Well #1 2021 Sample
		GCDWQ MAC	GCDWQ AO	
Lab Results: General				
Alkalinity (total, as CaCO ₃)	mg/L	NG	NG	180
Total organic carbon	mg/L	NG	NG	1.64
Chloride	mg/L	NG	250	10.7
Colour	CU	NG	15	<5.0
Conductivity	µS/cm	NG	NG	338
Total cyanide	mg/L	0.2 ^{1.1}	NG	<0.0020
Fluoride	mg/L	1.5	NG	0.24
Hardness (as CaCO ₃), from total Ca/Mg	mg/L	NG	NG	201
Langelier Index		NG	NG	<-5.0
pH		NG	7.0 - 10.5 ^{2.1}	7.92
Total dissolved solids (computed)	mg/L	NG	500	225
Sulphate	mg/L	NG	500 ^{2.2}	15.6
Sulphide (total, as S)	mg/L	NG	0.047 ^{2.3}	<0.020
UV transmittance at 254 nm - filtered	%	NG	NG	97.6
Nutrients				
Ammonia (total, as N)	mg/L	NG	NG	<0.050
Nitrate (as N)	mg/L	10	NG	0.347
Nitrite (as N)	mg/L	1	NG	<0.010

See Guideline Notes in Section 6.2.3.

Table 4: Faulder Well General Potability Parameters 2021 Summary

6.2.2. Source Water General Potability Parameter Summary 2018 to 2020

Analyte	Unit	Average	Minimum	Maximum	Number of Results	Number of Results with Exceedances
Lab Results: General						
Alkalinity (total, as CaCO ₃)	mg/L	155	153	159	3	0
Total organic carbon	mg/L	1.06	0.84	1.27	2	0
Chloride	mg/L	7.56	6.28	8.73	3	0
Colour	CU	<5.0	<5.0	<5.0	3	0
Conductivity	µS/cm	325	319	329	3	0
Total cyanide	mg/L	<0.0020	<0.0020	<0.0020	3	0
Fluoride	mg/L	0.17	0.16	0.18	3	0
Hardness (as CaCO ₃), from total Ca/Mg	mg/L	144	136	156	3	0
Langelier Index		0.3	0.2	0.3	3	0
pH		7.91	7.89	7.92	3	0
Total dissolved solids (computed)	mg/L	151.8	83.4	192	3	0
Sulphate	mg/L	14.6	14.1	15.2	3	0
Sulphide (total, as S)	mg/L	<0.020	<0.020	<0.020	2	0
Turbidity	NTU	0.12	0.10	0.14	3	0
UV transmittance at 254 nm - filtered	%	97.7	97.3	98.0	2	0
Nutrients						
Ammonia (total, as N)	mg/L	0.034	0.043	<0.050	2	0
Nitrate (as N)	mg/L	0.360	0.271	0.502	3	0
Nitrite (as N)	mg/L	<0.010	<0.010	<0.010	3	0

See Guideline Notes in Section 6.2.3.

Table 5: Faulder Well General Potability Parameters 2018 to 2020 Summary

6.2.3. Guidelines Notes for General Potability Parameters

1. Notes for Guidelines for Canadian Drinking Water Quality - Maximum Acceptable Concentrations (GCDWQ MAC)

Note 1.1 for Total cyanide:

The MAC for free cyanide is 0.2 mg/L. A maximum of 0.2 mg/L was used, in this report, to identify exceedances for total cyanide as a means for determining the potential for exceeding the free cyanide guideline.

Note 1.2 for Turbidity:

"Waterworks systems that use a surface water source or a groundwater source under the direct influence of surface water should filter the source water to meet health-based turbidity limits, as defined for specific treatment technologies. Where possible, filtration systems should be designed and operated to reduce turbidity levels as low as possible, with a treated water turbidity target of less than 0.1 NTU at all times. Where this is not achievable, the treated water turbidity levels from individual filters should meet the requirements described in GCDWQ.

For systems that use groundwater that is not under the direct influence of surface water, which are considered less vulnerable to faecal contamination, turbidity should generally be below 1.0 NTU.

For effective operation of the distribution system, it is good practice to ensure that water entering the distribution system has turbidity levels below 1.0 NTU."

2. Notes for Guidelines for Canadian Drinking Water Quality - Aesthetic Objectives (GCDWQ AO)

Note 2.1 for pH:

The operational guideline for pH is a range of 7.0 to 10.5 in finished drinking water.

Note 2.2 for Sulphate:

There may be a laxative effect in some individuals when sulphate levels exceed 500 mg/L. Health authorities should be notified of drinking water sources containing above 500 mg/L.

Note 2.3 for Sulphide (total, as S):

The aesthetic objective for sulphide (as H₂S) is 0.05 mg/L. This is equivalent to 0.047 mg/L sulphide (as S).

6.2.4. Source Water Total Metals 2021

Analyte	Unit	Guideline		Faulder Well Sept 14, 2021 Sample
		GCDWQ MAC	GCDWQ AO	
Lab Results: Total Metals				
Aluminum (total)	mg/L	2.9 ^{1.1}	0.100 ^{2.1}	0.0114
Antimony (total)	mg/L	0.006	NG	<0.00020
Arsenic (total)	mg/L	0.010 ^{1.2}	NG	<0.00050
Barium (total)	mg/L	2.0 ^{1.3}	NG	0.103
Boron (total)	mg/L	5	NG	<0.0500
Cadmium (total)	mg/L	0.007 ^{1.4}	NG	0.00001
Calcium (total)	mg/L	NG	NG	58.8
Chromium (total)	mg/L	0.05	NG	<0.00050
Cobalt (total)	mg/L	NG	NG	<0.00010
Copper (total)	mg/L	2 ^{1.5}	1	0.00346
Iron (total)	mg/L	NG	0.3	<0.010
Lead (total)	mg/L	0.005 ^{1.6}	NG	<0.00020
Magnesium (total)	mg/L	NG	NG	13.1
Manganese (total)	mg/L	0.12 ^{1.7}	0.02 ^{2.2}	0.00025
Mercury (total)	mg/L	0.001	NG	<0.000010
Molybdenum (total)	mg/L	NG	NG	0.0235
Nickel (total)	mg/L	NG	NG	<0.00040
Potassium (total)	mg/L	NG	NG	3.16
Selenium (total)	mg/L	0.05	NG	<0.00050
Sodium (total)	mg/L	NG	200	13.1
Strontium (total)	mg/L	7.0 ^{1.8}	NG	0.677
Uranium (total)	mg/L	0.02	NG	0.0237
Zinc (total)	mg/L	NG	5.0	0.0046

See Guideline Notes in Section 6.2.6.

Table 6: Faulder Well Total Metals Potability 2021 Summary

6.2.5. Source Water Total Water Summary 2018 to 2020

Analyte	Unit	Average	Minimum	Maximum	Number of Results	Number of Results with Exceedances
Lab Results: Total Metals						
Aluminum (total)	mg/L	0.0085	<0.0050	0.0177	3	0
Antimony (total)	mg/L	<0.00020	<0.00020	<0.00020	3	0
Arsenic (total)	mg/L	0.00036	<0.00050	0.00058	3	0
Barium (total)	mg/L	0.0940	0.0928	0.0946	3	0
Boron (total)	mg/L	0.0185	<0.0050	0.0279	3	0
Cadmium (total)	mg/L	0.000011	<0.000010	0.000015	3	0
Calcium (total)	mg/L	38.8	36.5	42.1	3	0
Chromium (total)	mg/L	0.00039	<0.00050	0.00066	3	0
Cobalt (total)	mg/L	<0.00010	<0.00010	<0.00010	3	0
Copper (total)	mg/L	0.00207	0.00135	0.00279	3	0
Iron (total)	mg/L	0.020	<0.010	0.051	3	0
Lead (total)	mg/L	0.00015	<0.00020	0.00025	3	0
Magnesium (total)	mg/L	11.4	10.8	12.4	3	0
Manganese (total)	mg/L	0.00031	<0.00020	0.00057	3	0
Mercury (total)	mg/L	<0.000010	<0.000010	<0.000010	3	0
Molybdenum (total)	mg/L	0.0243	0.0238	0.0250	3	0
Nickel (total)	mg/L	<0.00040	<0.00040	<0.00040	3	0
Potassium (total)	mg/L	3.03	2.94	3.21	3	0
Selenium (total)	mg/L	<0.00050	<0.00050	<0.00050	3	0
Sodium (total)	mg/L	11.4	11.0	12.1	3	0
Strontium (total)	mg/L	0.641	0.614	0.667	3	0
Uranium (total)	mg/L	0.0224	0.0209	0.0231	4	4
Zinc (total)	mg/L	<0.0040	<0.0040	<0.0040	3	0

See Guideline Notes in Section 6.2.6.

Table 7: Faulder Well Total Metals Potability 2018 to 2020 Summary

6.2.6. Guidelines Notes for Total Metals Potability

1. Notes for Guidelines for Canadian Drinking Water Quality - Maximum Acceptable Concentrations (GCDWQ MAC)

Note 1.1 for Aluminum (total): The maximum acceptable concentration (MAC) for total aluminum in drinking water is 2.9 mg/L (2 900 µg/L) based on a locational running annual average of a minimum of quarterly samples taken in the distribution system. (Update March 5, 2021)

Note 1.2 for Arsenic (total): Every effort should be made to maintain arsenic levels in drinking water as low as reasonably achievable.

Note 1.3 for Barium (total): Update January 24, 2020. The MAC was revised from 1.0 mg/L to 2.0 mg/L.

Note 1.4 for Cadmium (total): A maximum acceptable concentration (MAC) of 0.007 mg/L (7 µg/L) is established for total cadmium in drinking water, based on a sample of water taken at the tap. (Update July 14, 2020).

Note 1.5 for Copper (total): A maximum acceptable concentration (MAC) of 2 mg/L is established for total copper in drinking water, based on a sample of water taken at the tap. Guidelines for Canadian Drinking Water Quality - Guideline Technical Document on Copper, June 2019.

Note 1.6 for Lead (total): The maximum acceptable concentration (MAC) for total lead in drinking water is 0.005 mg/L (5 µg/L), based on a sample of water taken at the tap and using the appropriate protocol for the type of building being sampled. Every effort should be made to maintain lead levels in drinking water as low as reasonably achievable (or ALARA). (GCDWQ: Guideline Technical Document; March, 2019)

Note 1.7 for Manganese (total): Guidelines for Canadian Drinking Water Quality - Guideline Technical Document on manganese, May 2019.

Note 1.8 for Strontium (total): Guidelines for Canadian Drinking Water Quality - Guideline Technical Document on strontium, May 2019.

2. **Notes for Guidelines for Canadian Drinking Water Quality - Aesthetic Objectives (GCDWQ AO)**

Note 2.1 for Aluminum (total): The operational guidance (OG) value for total aluminum in drinking water is 0.100 mg/L (100 µg/L) to optimize water treatment and distribution system operations. This value is based on a locational running annual average. The sampling frequency required to calculate the locational running annual average will vary based on the type of treatment facility and the sampling location. (Update March 5, 2021)

Note 2.2 for Manganese (total): Guidelines for Canadian Drinking Water Quality - Guideline Technical Document on manganese, May 2019.

7. Distribution System Water Quality

All treated distribution system water quality parameters are compared to the *British Columbia Drinking Water Protection Act and Regulation (DWPA)* and the *Guidelines for Canadian Drinking Water Quality (GCDWQ)* unless otherwise noted, which could be indicated as an operational guideline (OG). The *DWPA* and *GCDWQ* define these parameters and set Aesthetic Objectives (AO) and Maximum Acceptable Concentrations (MAC).

All accredited laboratory tests in 2021 were performed by Caro Analytical Services (Kelowna, B.C.)

7.1. Distribution System Bacteriological Results

Samples from the distribution system were analyzed for Total Coliforms and *Escherichia coli* (*E.coli*). Schedule A of the *BC Drinking Water Protection Regulation* provides bacteriological testing criteria as given below.

Schedule A
Water Quality Standards for Potable Water
(sections 2 and 9)

Parameter:	Standard:
Fecal coliform bacteria	No detectable fecal coliform bacteria per 100 ml
<i>Escherichia coli</i>	No detectable <i>Escherichia coli</i> per 100 ml
Total coliform bacteria	
(a) 1 sample in a 30 day period	No detectable total coliform bacteria per 100 ml
(b) more than 1 sample in a 30 day period	At least 90% of samples have no detectable total coliform bacteria per 100 ml and no sample has more than 10 total coliform bacteria per 100 ml

The Faulder distribution system has three dedicated sample stations:

- Sampling Location S107 UTS (Uranium Treatment System) Discharge is located after the untreated well water has been blended with treated well water for uranium removal prior to entering the distribution system.
- The other two sampling locations, 176 Fish Lake Road and Mountain View Road, are sampling locations within the distribution system.

The following is a summary of the bacteriological laboratory results which are collected bi-weekly from the Faulder Water System. Samples were analyzed for Total Coliforms and *Escherichia coli* (*E.coli*).

Analyte	Sampling Location	Unit	Average	Min	Max	Number of Results	Number of Results with Exceedances
Lab Results: Microbiological							
Background bacteria	176 Fish Lake Rd	CFU/100 mL	1	<1	OG*	18	0
	Mountain View Rd	CFU/100 mL	3	<1	34	20	0
	S107 UTS Discharge	CFU/100 mL	<1	<1	OG*	29	0
E. coli (counts)	176 Fish Lake Rd	CFU/100 mL	<1	<1	OG*	18	1
	Mountain View Rd	CFU/100 mL	<1	<1	<1	20	0
	S107 UTS Discharge	CFU/100 mL	<1	<1	OG*	29	1
Total coliforms (counts)	176 Fish Lake Rd	CFU/100 mL	<1	<1	OG*	18	1
	Mountain View Rd	CFU/100 mL	<1	<1	<1	20	0
	S107 UTS Discharge	CFU/100 mL	<1	<1	OG*	29	2

OG* = Overgrown with bacteria, hence presence or absence of total coliforms or *E. Coli* could not be determined.

Table 8: Post Uranium Treatment and Distribution Water Bacteriological Testing 2021 Summary

As shown in Table 8, there were three (3) exceedances of total coliforms and two (2) for *E. Coli* in 2021. One sample from post uranium treatment (sampling location S107 UTS Discharge) had a positive result of 1 total coliform on April 26, but was less than detection limit *E. Coli*. There were two samples (S107 UTS Discharge and 176 Fish Lake Rd) in 2021 (July 6th) where the laboratory results came back as *Overgrown*, however the presence or absence of either Total Coliform or *E. Coli* could not be determined. As a precaution, a Water Quality Advisor Notice was issued and the system was re-sampled for coliforms on July 9th and July 12th; both samples were less than detection for both Total Coliforms and *E. coli*. Upon further investigation with the laboratory, Caro Analytical Services, it was discovered that the July 6th coliforms samples were plated on the incorrect media and even though they were moved to the correct media upon discovery of the laboratory error, the results came back *Overgrown* with colonies, without being able to determine the absence or presence of either Total Coliforms or *E. coli*.

In addition to the bacteriological samples which are collected bi-weekly, field parameters of pH, temperature, conductivity, total dissolved solids (TDS) and turbidity are also using portable probes or test kits by Operations staff.

7.2. Distribution System Water Quality Field Parameters

The following is a summary of the field parameters that are measured routinely in the distribution system.

Analyte	Unit	Average	Minimum	Maximum	Number of Results
Field Results					
Conductivity	µS/cm	369	327	441	41
pH		7.54	6.81	7.79	41
Total dissolved solids	mg/L	261	231	314	41
Temperature	°C	11	4	21.2	41
Turbidity	NTU	0.2	0.05	0.56	63

Table 9: Post Uranium Treatment and Distribution Field Measured Parameters 2021 Summary

7.3. Total Uranium Results

A monthly sample is collected for total uranium from the sample location (S107 UTS Discharge) post uranium treatment after the treated well water and untreated well water have been blended, but before the water enters the distribution system. In 2021, all water samples were below *The Guidelines for Canadian Drinking Water Quality* Maximum Acceptable Concentration (MAC) of 0.02 mg/L for total uranium prior to entering the distribution system.

Analyte	Unit	Average	Minimum	Maximum	Number of Results	Number of Results with Exceedances
Lab Results: Total Metals						
Uranium (total)	mg/L	0.0155	0.0122	0.0173	11	0

Table 10: Faulder Water System Total Uranium 2021 Summary

7.4. Water Quality Complaints

None to report for 2021.

8. Water System Notifications

The Interior Health Authority’s team of drinking water officers are responsible for providing the oversight to ensure compliance and drinking water safety. The IHA is responsible for issuing *Permits to Operate* to drinking water systems. The Interior Health Authority has four types of water notifications to inform users of negative impacts to water quality.

8.1. Water Quality Advisory (WQA)

There is some level of risk associated with consuming the drinking water but a Boil Water Notice is not needed. The risk is elevated for people with weakened immune systems, the elderly and infants and young children.

A *Water Quality Advisory* was issued on July 9th and rescinded on July 13th in response to July 6th bacteriological results which came back as *Overgrown*, but the presence or absence of Total Coliforms or *E. coli* could not be determined. Additionally, bacteriological samples were collected from the untreated groundwater Well #1, post uranium treatment and within the distribution system on July 9th and July 12th which provided two consecutive samples with less than detection for coliforms.

8.2. Boil Water Notice (BWN)

There are organisms in the water that can make you sick. To safely consume (swallow) the water, you must bring it to a rolling boil for at least 60 seconds, or use a safe alternate source of water.

In 2021, there were four (4) *Boil Water Notices* issued, as tabulated below, for the Upper Zone because of loss of system pressure when an emergency generator failed during a utility power outage.

Date BWN Issued	Date BWN Rescinded
May 9, 2021	May 14, 2021
July 31, 2021	August 6, 2021
September 9, 2021	September 24, 2021
October 5, 2021	October 12, 2021

Table 11: Faulder Water System Boil Water Notices 2021 Dates

8.3. Do Not Consume (DNC)

There are harmful chemicals or other bad things in the water that can make you sick. You cannot make the water safe by boiling. The water can make you sick if you consume (swallow) it. You cannot use the water for drinking, brushing teeth, washing/preparing/cooking food or pet’s drinking water. You can bath, shower and water plants and gardens with the water.

No DNCs issued in 2021.

8.4. Do Not Use (DNU)

There are known microbial, chemical or radiological contaminants in the water and that any contact with the water with the skin, lungs or eyes can be dangerous. Do not turn on your tap for any reason and do not use your water. You CANNOT make the water safe by boiling it.

No DNUs issued in 2021.

9. Program Updates and Status

9.1. Cross Connection Control Program

The RDOS continued work in 2021 towards implementing an official Cross Connection Control program and bylaw. On January 21, 2021 the RDOS adopted Bylaw No 2851, 2020 Cross Connection Control. Bylaw 2851 is a Regional bylaw that will be applicable to all RDOS owned and operated water systems.

9.2. Capital Works / System Additions

No items of note in 2021.

9.3. Emergency Response Plan

The *Emergency Response Plan* is scheduled to be updated in 2022.

9.4. Future System Upgrades

No upgrades planned for 2022.

9.5. Supervisory Control and Data Acquisition (SCADA System)

A SCADA system is an integral part of a modern water system. It is comprised of sensors, programmable controllers, communications and network devices installed at pump stations and treatment facilities. The SCADA system controls equipment such as pumps and monitors system operations while storing important data such as intake turbidity levels, pumping flow rates, and storage reservoir levels. The system also provides for efficiencies in operation and the response to system failures. This is achieved by the ability to monitor and view the system remotely through a software package along with the generation of alarms that will notify the system Operators when there is a problem or failure within a system.

In 2020 the RDOS had a consultant develop a SCADA Master Plan. This plan will assist with upgrades to the existing SCADA network along with providing a detailed plan on how to move forward into the future in an efficient manner.

In 2021 the RDOS implemented a new SCADA software package. This include new graphics that conformed to the specifications outlined in the Master Plan along with enhanced security for remote access and improved data trending capabilities.

9.6. System Maintenance/Upgrades

The RDOS had a generator service contractor troubleshoot the generator at the Booster Station/Reservoir that repeatedly failed during utility power outages. In December, the suspected cause was determined to be the voltage regulator. The voltage regulator was replaced and the unit subsequently load tested for four hours with no anomalies in operation reported.

9.7. Water Quality Monitoring Program

The *Water Quality Monitoring Program* is scheduled to be updated in 2022.

10. Summary

All tested source water parameters from the Faulder groundwater well met the applicable criteria in 2021 with the exception of uranium exceeding the Maximum Acceptable Concentration (MAC) as set by *The Guidelines for Canadian Drinking Water Quality*. All tested treated distribution water parameters also met the applicable criteria in 2021. The operation of the Faulder Uranium Treatment System and distribution system by a team of RDOS *EOCP* certified Operators resulted in the continuous supply of high quality water to the community of Faulder. The RDOS continues to work on reviewing and upgrading the various programs that support facilitating the highest quality of water possible.