2023

ANNUAL WATER QUALITY MONITORING REPORT

SUN VALLEY WATER SYSTEM

Sun Valley Pump Station and Reservoir

Regional District of Okanagan-Similkameen

May, 2024

2023 ANNUAL WATER QUALITY MONITORING REPORT
SUN VALLEY WATER SYSTEM
SUN VALLEY, B.C.

Copy prepared for:

INTERIOR HEALTH AUTHORITY (IHA)

Interior Health Drink Water Program

3090 Skaha Lake Rd.

Penticton, B.C.

V2A 7H2

Attention: Keyana Bjornson, CPHI(C)

Environmental Health Officer

Drinking Water Program

Prepared by:

Regional District of Okanagan-Similkameen

101 Martin St.

Penticton, B.C.

V2A 5J9

Author: Rob Palmer, A.Sc.T.

Environmental Technologist

Table of Contents

TABLES

FIGURES

1. Introduction

As the owner and operator of the Sun Valley water system, the Regional District Okanagan-Similkameen is responsible for the following Annual Report summarizing the results from the 2023 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 Sun Valley water system is located within Electoral Area D southeast of Okanagan Falls. The Sun Valley water system consists of a deep groundwater well, a reservoir, distribution pumps and a distribution system. They system supplies water to approximately 28 services which include domestic, irrigation and commercial uses. The water system also supports fire protection in the community.

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 Sun Valley water system remained classified as a Small Water System (SWS) in 2023.

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 (4) 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 1 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
8266				X				X
8761		X						X
9322		X						X
1000977			X					X

Table 1: RDOS Operator Certifications 2023

4. Annual Water Usage

The RDOS started trending the monthly and annual pumping volumes extracted from the Sun Valley well in 2019 with the installation of a flow meter. In 2023, a total of 172,552 m^3 of water was pumped from the Sun Valley well, up from 142,205 m^3 in 2022.

4.1. Consumption Records

	Cubic Meters (m^3)	US Gallons	
Annual Total Usage	172,552	45,588,238	**Date**
Minimum Daily Flow	6	1,585	Feb 26 / Mar 4, 2023
Maximum Daily Flow	1,686	445,394	July 12, 2023

Table 2: Annual Water Consumption 2023

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

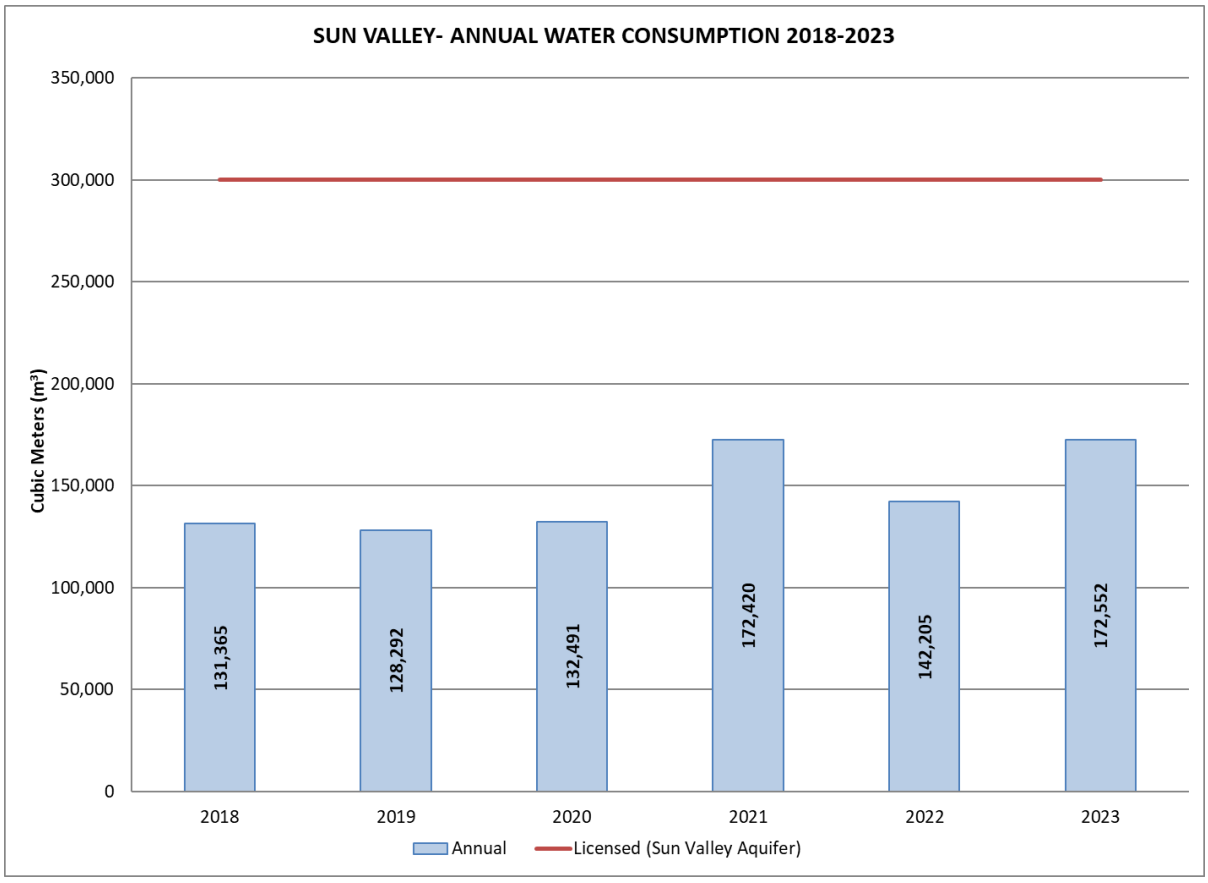

Figure 1: Annual Water Consumption 2018 to 2023

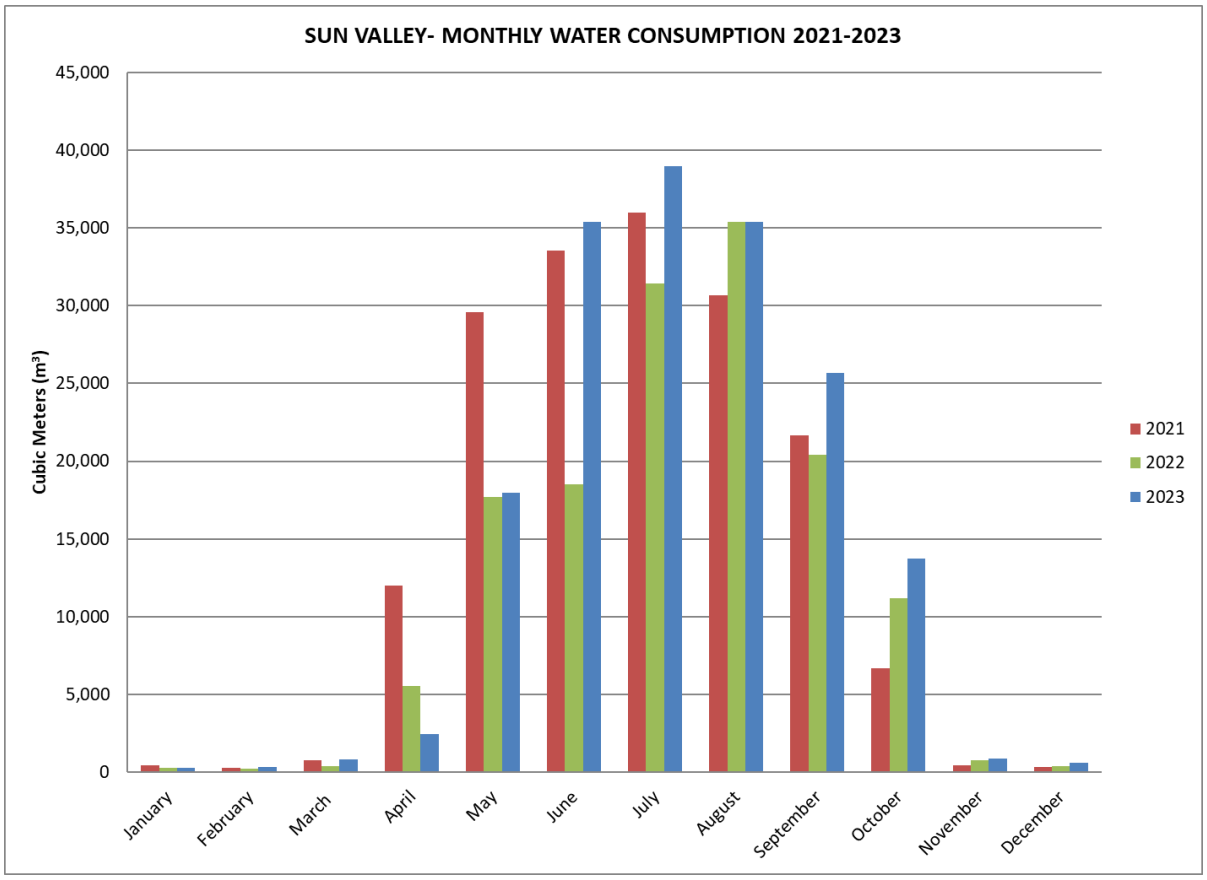

Figure 2: Monthly Water Consumption 2020 to 2023

4.2. Water Conservation

On July 13, 2023 the Sun Valley water system moved from Stage "Normal" to Stage 1 water restrictions. Stage 1 restrictions are intended to reduce total and peak use by 10%. Stage 2 restrictions, with the goal of a voluntary reduction of 20%, were implemented July 21, 2023. On October 16th the RDOS returned all systems to Stage "Normal".

5. Aquifer Monitoring

The RDOS began monitoring the aquifer level in the Sun Valley well in 2019. Due to a technical issue, the well level monitoring equipment failed in 2021. A new well level sensor and updated electronics (PLC) was installed in the first quarter of 2023.

6. Source Water Quality

All untreated source water quality parameters are compared to the applicable criteria set out in the British Columbia Drinking Water Protection Act and Regulation (DWPA), the Guidelines for Canadian Drinking Water Quality (GCDWQ), Interior Health Authority programs and Operational Guidelines (OG). The DWPA and GCDWQ define these parameters and set Aesthetic Objectives (AO) and Maximum Acceptable Concentrations (MAC).

Iron and manganese are present in the Sun Valley well water with concentrations that currently meet the criteria set in the *Guidelines for Canadian Drinking Water Quali*ty, however, iron and manganese continue to create problems within the Sun Valley distribution system.

It is believed that when the iron and manganese in the well water comes in contact with oxygen in the storage reservoir, oxidation of these metals occurs. This results in precipitates of iron and manganese forming reddish/brown sediments. The precipitates settle out in the distribution system piping and form a layer which becomes a medium where bacterial growth can occur. It is suspected that the Total Coliform bacteria that has been reported in a number of samples over the past years are a result of regrowth of bacteria in these sediments. In addition, discolored water and clogging of home filtration systems occurs when these sediments are disturbed and become suspended in the water.

The RDOS continues to closely monitoring the bacteriological quality of the water in the distribution system and responds accordingly with flushing of the system with high velocity water to scour the pipe walls to remove the buildup of iron and manganese precipitates.

In 2020 the RDOS started to investigate options for sequestering the iron and manganese in a small bench scale test. Sequestering is achieved by the use of a chemical additive to keep the iron and manganese in solution and prevent it from precipitating. The bench scale testing conducted to-date has not provided conclusive results and the RDOS will continue its investigation. Public consultation will occur before moving forward with any implementation plan for treatment.

All accredited laboratory tests in 2023 were performed by Caro Analytical Services (Kelowna, B.C.)

6.1. Source Water Bi-Weekly Monitoring

Bi-weekly monitoring of the Sun Valley well includes bacteriological grab samples and field measured parameters using field kits. Samples from the well were analyzed for Total Coliforms and Escherichia coli (E.coli). The table below summaries the bacteriological laboratory results and the field measured parameters from the Sun Valley groundwater well.

Analyte	Unit	Average	Min	Max	Number of Results	Number of Results with Exceedances
Field Results						
Conductivity	µS/cm	486	456	545	22	0
pH		7.75	7.48	8.53	23	0
Total dissolved solids	mg/L	345	325	388	22	0
Temperature	°C	10.6	8.5	15.6	23	0
Turbidity	NTU	0.18	0.08	0.32	24	0
Lab Results						
Microbiological						
Background bacteria	CFU/100 mL	<1	<1	<1	20	0
Total coliforms (counts)	CFU/100 mL	<1	<1	<1	23	0
E. coli (counts)	CFU/100 mL	<1	<1	<1	23	0

Table 3: Sun Valley Well Bi-Weekly Testing 2023 Summary

6.2. Source Water Comprehensive Potable Water Results

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 Allowable Concentration (MAC), Interim Maximum Allowable Concentrations (IMAC) and Aesthetic Objectives (AO) for parameters if applicable. In 2023, there were no exceedances of the guidelines in the Sun Valley 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. All accredited laboratory tests in 2023 were performed by Caro Analytical Services (Kelowna, B.C.)

All tested source water parameters met the applicable guidelines in 2023 with no notable increasing or decreasing trends.

6.2.1. Source Water General Potability Parameters

				Well	Well	Well
Sampling Location						
Date Sampled				13-Sep-21	26-Sep-22	26-Sep-23
Analyte	**Unit**	**Guideline**				
		GCDWQ MAC	GCDWQ AO			
Lab Results						
Alkalinity (total, as CaCO3)	mg/L	NG	NG	224	240	230
Ammonia (total, as N)	mg/L	NG	NG	<0.050	<0.050	<0.050
Total organic carbon	mg/L	NG	NG	0.74	<0.50	2.4
Chloride	mg/L	NG	250	6.06	6.58	6.28
Colour	CU	NG	15	<5.0	<5.0	<5.0
Conductivity	µS/cm	NG	NG	471	465	465
Total cyanide	mg/L	0.2 [1.1]	NG	<0.0020	<0.0020	<0.0020
Fluoride	mg/L	1.5	NG	0.33	0.37	0.51
Hardness (as CaCO3), from total Ca/Mg	mg/L	NG	NG	226	225	238
Langelier Index		NG	NG	1	0.8	0.6
Nitrate (as N)	mg/L	10	NG	<0.010	<0.010	<0.010
Nitrite (as N)	mg/L	1	NG	<0.010	<0.010	<0.010
pH		NG	7.0 - 10.5 [2.1]	8.2	8.11	7.92
Potassium (total)	mg/L	NG	NG	3.24	3.26	3.17
Total dissolved solids (computed)	mg/L	NG	500	285	296	296
Sulphate	mg/L	NG	500 [2.2]	46.5	48.2	48.6
Sulphide (total, as S)	mg/L	NG	0.047 [2.3]	<0.020	<0.020	<0.020
Turbidity	NTU	N [1.2]	NG	1.26	1.69	1.87
UV transmittance at 254 nm - filtered	%	NG	NG	98.6	99.1	98.7

See Guideline Notes in Section 6.2.2

Table 4: Sun Valley Well General Potability Parameters 2021-2023

6.2.2. Guideline 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).

6.2.3. Source Water Total Metals

Analyte	Unit	Guideline		Sampling Location: Well	Well	Well
				Date Sampled: 13-Sep-21	26-Sep-22	26-Sep-23
		GCDWQ MAC	GCDWQ AO			
Lab Results						
Total Metals						
Aluminum (total)	mg/L	2.9 [1.1]	0.100 [2.1]	0.0067	<0.0050	<0.0050
Antimony (total)	mg/L	0.006	NG	<0.00020	<0.00020	<0.00020
Arsenic (total)	mg/L	0.010 [1.2]	NG	0.00111	0.0011	0.00106
Barium (total)	mg/L	2.0 [1.3]	NG	0.105	0.106	0.111
Boron (total)	mg/L	5	NG	<0.0500	<0.0500	<0.0500
Cadmium (total)	mg/L	0.007 [1.4]	NG	<0.000010	<0.000010	<0.000010
Calcium (total)	mg/L	NG	NG	69.6	69.9	74.6
Chromium (total)	mg/L	0.05	NG	0.00066	<0.00050	<0.00050
Cobalt (total)	mg/L	NG	NG	<0.00010	<0.00010	<0.00010
Copper (total)	mg/L	2 [1.5]	1	0.00079	0.00044	0.00169
Iron (total)	mg/L	NG	0.3	0.207	0.199	0.229
Lead (total)	mg/L	0.005 [1.6]	NG	0.00025	<0.00020	<0.00020
Magnesium (total)	mg/L	NG	NG	12.6	12.2	12.4
Manganese (total)	mg/L	0.12 [1.7]	0.02 [2.2]	0.0589	0.0576	0.058
Mercury (total)	mg/L	0.001	NG	<0.000010	<0.000010	<0.000010
Molybdenum (total)	mg/L	NG	NG	0.00232	0.00215	0.00229
Nickel (total)	mg/L	NG	NG	0.00074	0.00041	<0.00040
Selenium (total)	mg/L	0.05	NG	<0.00050	<0.00050	<0.00050
Sodium (total)	mg/L	NG	200	10.1	9.52	10.5
Strontium (total)	mg/L	7.0 [1.8]	NG	0.528	0.626	
Uranium (total)	mg/L	0.02	NG	0.00362	0.00311	0.00355
Zinc (total)	mg/L	NG	5.0	0.0299	0.0203	0.0201

See Guideline Notes in Section 6.2.4

Table 5: Sun Valley Well Total Metals Potability Parameters 2021-2023

6.2.4. Guideline 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 Allowable Concentrations (MAC).

All accredited laboratory tests in 2023 were performed by Caro Analytical Services (Kelowna, B.C.)

7.1. Distribution System Bacteriological Results

The Sun Valley distribution system has two dedicated sample stations that are alternated between bi-weekly. Samples from the distribution system were analyzed for Total Coliforms and *Escherichia coli* (*E.coli*).

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
Escherichia coli	No detectable Escherichia coli 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

As discussed above under source water, oxidized iron and manganese are forming reddish/brown sediments within the distribution system. The precipitates settle out in the distribution system piping and forms a layer which becomes a medium where bacterial growth can occur. It is suspected that the Total Coliform bacteria that has been reported in a number of samples over the past years are a result of regrowth of bacteria in these sediments. In addition, discolored water and clogging of home filtration systems occurs when these sediments are disturbed and become suspended in the water.

The RDOS continues to closely monitoring the bacteriological quality of the water in the distribution system and responds accordingly with flushing of the system with high velocity water to scour the pipe walls to remove the buildup of iron and manganese precipitates.

All distribution samples had no detections for *E.coli* or Total Coliforms in 2023. The following is a summary of the bacteriological laboratory results from the distribution system.

Analyte	Sampling Location	Unit	Avg	Min	Max	Number of Results	Number of Results with Exceedances
Lab Results							
Background bacteria	Pinewinds Pl.	CFU/100 mL	3	1	50	20	0
	Sun Valley Way	CFU/100 mL	1	<1	3	20	0
Total coliforms (counts)	Pinewinds Pl.	CFU/100 mL	<1	<1	<1	22	0
	Sun Valley Way	CFU/100 mL	<1	<1	<1	21	0
E. coli (counts)	Pinewinds Pl.	CFU/100 mL	<1	<1	<1	22	0
	Sun Valley Way	CFU/100 mL	<1	<1	<1	21	0

Table 6: Distribution Water Bacteriological 2023 Summary

7.2. Distribution Water Quality Field Parameters

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

Analyte	Sampling Location	Unit	Average	Min	Max	Number of Results	Number of Results with Exceedances
Field Results							
Chlorine (free)	Pinewinds Pl.	mg/L	0.11	0.03	0.2	4	0
	Sun Valley Way	mg/L	0.05	0.02	0.11	4	0
Conductivity	Pinewinds Pl.	µS/cm	483	426	538	16	0
	Sun Valley Way	µS/cm	481	435	513	15	0
pH	Pinewinds Pl.		7.75	7.41	8.37	17	0
	Sun Valley Way		7.77	7.51	8.14	15	0
Total dissolved solids	Pinewinds Pl.	mg/L	343	300	378	16	0
Total dissolved solids	Sun Valley Way	mg/L	342	309	364	15	0
Temperature	Pinewinds Pl.	°C	11.1	5.8	18.4	16	0
	Sun Valley Way	°C	10.1	4.1	18.9	15	0
Turbidity	Pinewinds Pl.	NTU	0.99	0.21	2.33	24	0
	Sun Valley Way	NTU	1.39	0.18	4.31	22	0

Table 7: Distribution Field Measured Parameters 2023 Summary

7.3. Reservoir Supply Bi-Weekly Monitoring

Bi-weekly monitoring of the Sun Valley Reservoir includes bacteriological grab samples and field measured parameters using field kits. Samples from the Reservoir were analyzed for Total Coliforms and Esch*erichia coli* (*E.coli*). The table below summaries the bacteriological laboratory results and the field measured parameters from the Sun Valley Reservoir.

Analyte	Unit	Average	Minimum	Maximum	Number of Results	Number of Results with Exceedances
Field Results						
Conductivity	µS/cm	492	443	624	26	0
pH		7.83	7.49	8.66	26	0
Total dissolved solids	mg/L	346	244	444	26	0
Temperature	°C	9.5	6.1	12.2	25	0
Turbidity	NTU	1.27	0.45	2.08	29	0
Lab Results						
Microbiological						
Background bacteria	CFU/100 mL	1	1	8	24	0
Total coliforms (counts)	CFU/100 mL	<1	<1	<1	27	0
E. coli (counts)	CFU/100 mL	<1	<1	<1	27	0

Table 8: Sun Valley Reservoir Supply Bi-Weekly Testing 2023 Summary

7.4. Water Quality Complaints

No water quality complaints were received in 2023.

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.

No WQAs issued for 2023.

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 2023, four (4) *Boil Water Notices* were issued in 2023; three (3) in response to a loss of system pressure resulting from utility power outages (planned and unplanned) and the other one for a scheduled reservoir cleaning and system flushing. The *Boil Water Notices* were in effect between 7 and 8 days. The reason for the BWN, dates they were issued and rescinded have been tabulated below.

Reason for BWN	Date BWN Issued	Date BWN Rescinded
Planned Power Outage (Fortis Infrastructure Upgrades)	March 13, 2023	March 23, 2023
Power Outage	July 27, 2023	August 2, 2023
Planned Power Outage (Fortis Infrastructure Upgrades)	October 13, 2023	October 27, 2023
Planned Power Outage (Fortis Infrastructure Upgrades, Pump Station Supply Transformers)	November 3, 2034 and extended November 9, 2023 for a further planned FortisBC outage.	November 17, 2023

Table 9: Sun Valley Water System Boil Water Notices 2023 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 used 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 2022.

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 2022.

9. Program Updates and Status

9.1. Cross Connection Control Program

A cross connection is any actual or potential connection between the drinking water (potable) system and a non-potable substance (contaminant). Backflow is when the flow of water in a pipe reverses from the normal direction. When a cross connection and backflow occur simultaneously often the result is a contaminant entering the drinking water system.

Cross connection in plumbing systems require backflow preventers corresponding to the degree of hazard as indicated by the CSA B64.10, "Manual for the Selection and Installation of Backflow Preventers", as referenced in the BC Plumbing Code, or as determined by a CCC hazard assessment survey.

The RDOS adopted a Regional CCC Bylaw, No.2851, in 2020 to address cross connection and backflow prevention applicable to all agricultural, industrial, commercial and institutional properties. These property uses are required to have a suitable backflow protection device installed.

In February 2023, the RDOS started implementation of its Regional Cross Connection Control program with MTS Inc. (Vernon, B.C.) contracted as the program administrator.

Capital Works / System Additions

No items of note in 2023.

9.2. Emergency Response Plan

The Emergency Response Plan is scheduled to be updated in 2024.

9.3. Future Systems Upgrades

The RDOS will continue to investigate potential options for treatment of the iron and manganese in the Sun Valley water system.

9.4. Supervisory Control and Data Acquisition (SCADA) System

No items of note in 2023.

9.5. System Maintenance/Upgrades

The Sun Valley storage reservoir was cleaned and inspected on March 13, 2023 followed by flushing of the distribution system.

The routine fall flushing of the distribution system completed on October 17/18th.

FortisBC upgraded the transformers supplying the Sun Valley pump station on November 3, 2023. The distribution system was again flushed upon restoration of service.

9.6. Water Quality Monitoring Program

The Water Quality Monitoring Program is scheduled to be updated in 2024.

10. Summary

All tested source water parameters from the Sun Valley groundwater well met the applicable criteria in 2022. All tested distribution water parameters with the exception of turbidity met the applicable criteria in 2023. Four (4) *Boil Water Notices* were issued in 2023; three (3) in response to a loss of system pressure resulting from utility power outages (planned and unplanned) and the other one for a scheduled reservoir cleaning and system flushing. The operation of the Sun Valley system by a team of RDOS EOCP certified Operators resulted in the supply of the highest quality water possible to the community of Sun Valley. The RDOS continues to work on reviewing and upgrading the various programs that support facilitating the highest quality of water possible.