

# REGIONAL DISTRICT OF NANAIMO

## Water Service Area Annual Report 2023



### Whiskey Creek Water Service Area

June 2024



**REGIONAL DISTRICT OF NANAIMO**

*Water Services Department*

6300 Hammond Bay Rd, Nanaimo, BC Canada V9T 6N2 | Ph 250-390-6560

## Table of Contents

1.	Introduction.....	1
2.	Whiskey Creek Water System .....	1
2.1	Source Water .....	1
2.2	Reservoirs.....	1
2.3	Distribution System.....	1
3.	Water Sampling and Testing Program.....	2
4.	Water Quality - Source Water and Distribution System .....	2
5.	Water Quality Inquiries and Complaints .....	2
6.	Water Consumption .....	3
7.	Maintenance Program.....	4
8.	Operator Certification .....	4
9.	Water Service Area Projects.....	5
9.1	2023 Completed Studies & Projects.....	5
9.2	2023 Proposed Projects & Upgrades.....	5
10.	Emergency Response & Contingency Plan .....	6
11.	Supply Security.....	6
12.	Cross Connection Control.....	6
13.	Cyber Security .....	7
14.	Closing .....	7

Appendix A - Map of Whiskey Creek Water Service Area

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response & Contingency Plan

## 1.0 Introduction

The following annual report describes the Whiskey Creek Water Service Area and summarizes the water quality and production data from 2023. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response & Contingency Plan, and the Cross Connection Control Program.

This report is to be submitted to Island Health by the spring of 2024.

## 2.0 Whiskey Creek Water System

The Whiskey Creek water system was constructed in the 1970s and was initially operated by the subdivision developer, Westerlea Estates Ltd. The water system is located eight kilometres southwest of Qualicum Beach on the south side of Highway 4. There are 125 residential lots connected to the water system. In January 2011, the ownership and operation of the Whiskey Creek Water District was transferred to the RDN. A map of the Whiskey Creek Water Service Area is provided in Appendix A for reference.

### 2.1 Source Water

Previously, two water licenses allowed surface water to be extracted from nearby Crocker Creek for over 45 years. Water from Crocker Creek was temporarily stored in a raw water storage pond and wet well on Hebert Road. The water was dosed with a polymer, pumped through a pressure filter, chlorinated, and stored in a reservoir. Drinking water was then pumped into the water system via two booster pumps.

A permanent groundwater source has since been found as a better quality and more reliable water supply for the service area. In 2020, two test wells were drilled near Carson Road and source approval was received from Island Health. By the fall of 2021, a temporary overland groundwater supply line was installed and the switch was made from surface to groundwater sourcing. The location and depth of the permanent well supply infrastructure to the water storage reservoir was designed in 2022, and installed 2023. A permanent emergency backup generator is available in the event of a power failure.

### 2.2 Reservoirs

One service reservoir (concrete) is present at 979 Poplar Way and has a capacity of 195 m<sup>3</sup> (43,000 imperial gallons).

### 2.3 Distribution System

The water distribution system in Whiskey Creek is summarized in the table below. There are 9 fire hydrants and 4 flush-outs in the system, though the hydrants will eventually be removed as fire protection is provided via tanker service for this area.

Watermain Material	Length of mains in Whiskey Creek Water Service Area	Prevalence in Water Service Area
<u>Asbestos-concrete:</u> 100mm or smaller	1,280 m	40%
150mm or larger	1,920 m	60%

### 3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli Temperature, pH, Conductivity, TDS, Chlorine residual, Salinity
Monthly	RDN (in-house) Laboratory	Raw water UVT, Bacteria (total-coliform and e.coli)
Quarterly	Bureau Veritas	Raw water PH sampling
Monthly	BC Centre for Disease Control	Raw water bacteria (total coliform and e.coli)
Annual Source Water Testing (every Fall)	Bureau Veritas	Complete potability testing of raw source water
Annual System Water Testing (every Spring)	Bureau Veritas	Complete potability testing of distribution system water

### 4.0 Water Quality - Source Water and Distribution System

Up-to-date water quality reports and lab data are posted monthly on the RDN website at [www.rdn.bc.ca/whiskey-creek](http://www.rdn.bc.ca/whiskey-creek). Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

### 5.0 Water Quality Inquiries and Complaints

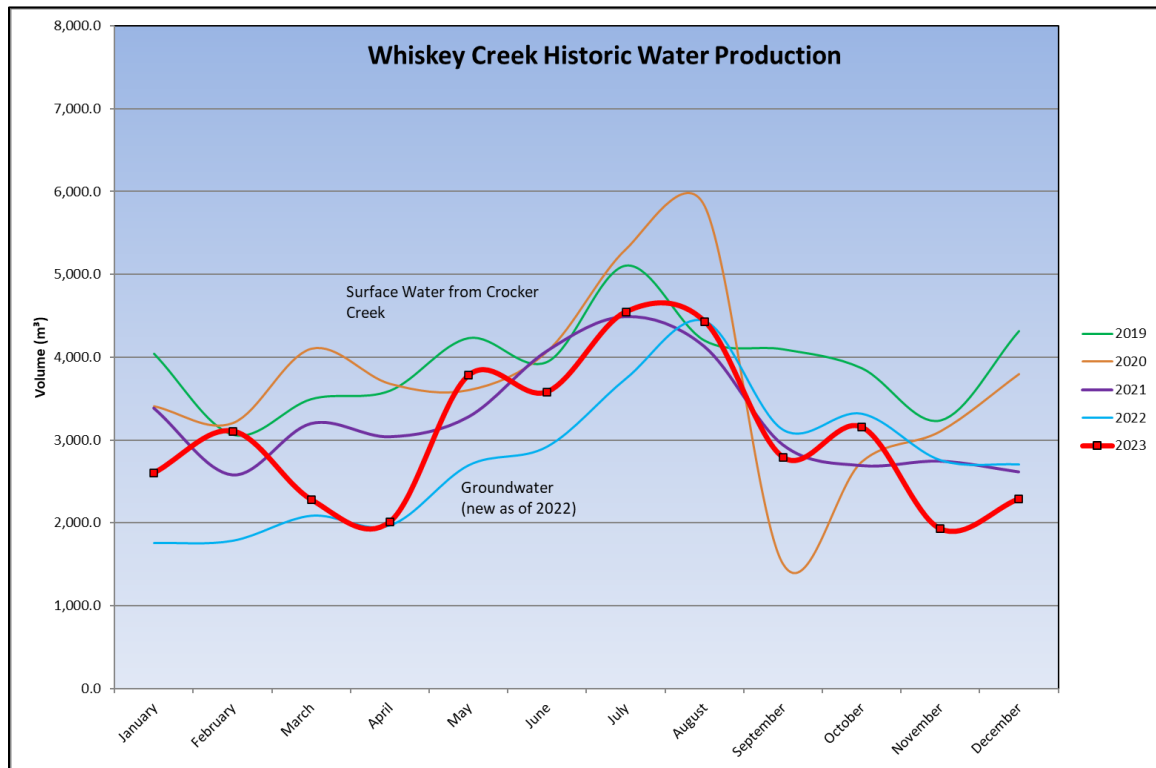
A few inquiries were received from the Whiskey Creek water service area in 2023 and were typically related to water billing and seasonal conservation guidelines.

A summary of the water system incidents in 2023 is given in the table below.

Activity in 2023	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	None	None
Equipment Malfunction	None	None
Water Main Breaks	None	None
Pump Failures	Monthly	Temp power outages

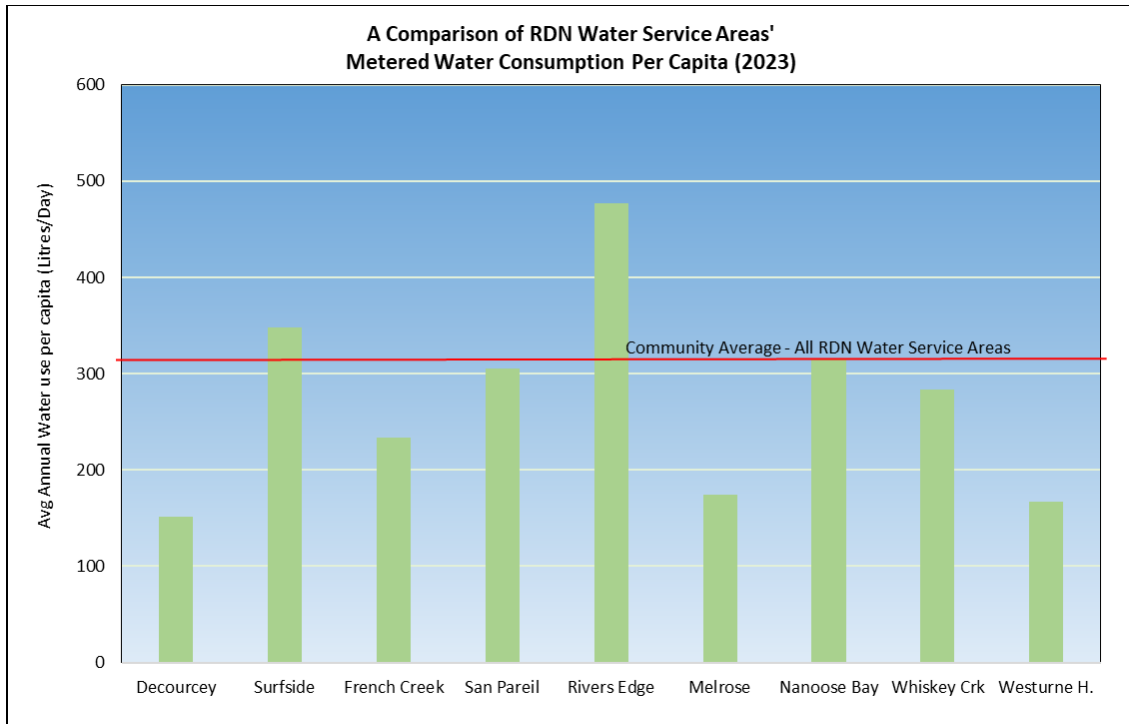
## 6.0 Water Production and Consumption

Monthly water production for the Whiskey Creek Water Service Area for the past 5 years is shown in the chart below.



### Consumption

In the Fall/Winter of 2023, the average usage per home in Whiskey Creek was 0.55 cubic metres per day (121 imperial gallons). In the summer, the average water usage was 0.95 cubic metres per day (209 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 283 L/day (based on 2.4 people/household). This consumption is *9% less* than the RDN system average of 313 L/day/capita in 2023.



## 7.0 Maintenance Program

Daily pump station inspections are carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Watermains are flushed once annually in the spring. Fire hydrants (9) are serviced once per year (either 'A-level' or 'B-level' maintenance) in the fall. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

Fire hydrants in the Whiskey Creek water system cannot be relied on for fire insurance purposes due to insufficient supply and capacity for fire flows and will be removed in the future.

## 8.0 Operator Certification

The Regional District Water & Utility Services staff are comprised of one Manager, one Project Engineer, one Engineering Technologist, one Engineering Technician, one Chief Operator, and seven certified operators.

The operators receive ongoing training and certification in:

- ✓ Water Treatment
- ✓ Water Distribution
- ✓ Wastewater Collection
- ✓ Cross Connection Control
- ✓ Asbestos Awareness
- ✓ Chlorine Handling
- ✓ WHMIS (Workplace Hazardous Material Information System)
- ✓ TDG (Transportation of Dangerous Goods)
- ✓ Confined Space Awareness
- ✓ Fall Protection
- ✓ First Aid
- ✓ Silica Awareness

## 9.0 Water Service Area Projects

### 9.1 2023 Completed Studies & Projects

- Completed transmission main and pump station upgrades;
- Corresponded with residents regarding water conservation;
- Utilized leak detection equipment and tracking;
- Began billing for metered consumption based on revised water rates;
- Followed Cross Connection Control program to reduce backflow prevention risks;
- Enforced outdoor watering restrictions during summer months;
- Advised residents regarding water leak repairs and bill adjustments;
- Continued the 2021-2030 Water Conservation Plan;
- Completed regular watermain flushing and hydrant maintenance;
- Maintained a high level of water quality;
- Continued quality control through regular testing and monitoring of water system;
- Implemented Phase 2 Water Systems SCADA Master Plan; and
- Continued valve maintenance program.

### 9.2 2024 Proposed Projects & Upgrades

- Remove all fire hydrants in service area;
- Renew chlorine analyzer;
- Begin Columbine Way watermain replacement project;
- Complete irrigation checks for high-water users;
- Continue watermain flushing and maintenance program;
- Continue leak detection equipment utilization program;
- Introduce new watermain flushing and metering procedures;
- Continue valve maintenance program;
- Continue the DWWP Water Conservation Plan; and
- Continue to offer numerous water saving incentives via rebates.



Poplar Way in  
Whiskey Creek

## 10.0 Emergency Response & Contingency Plan

The Regional District Emergency Response & Contingency Plan (ERCP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, pump failure, and drought management. The ERCP was reviewed and updated in 2023, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERCP is also attached to this report in Appendix C.



**Water Source Area Protection sign on Hebert Rd.**

## 11.0 Supply Security

The RDN continues to effectively manage water supply in its service areas in response to ongoing demand and the effects of climate change. Most RDN water service areas are unlikely to expand, so growth in demand is not expected. Initiatives that provide resiliency for the groundwater sources that serve residents remain a high priority. Reservoir capacity and redundancy are reviewed with regards to water storage during periods of drought, and water from backup sources is available to be delivered in the case of an emergency. Groundwater quality is regularly tested in all RDN water service areas. The aquifers within the regional district are monitored through the RDN's Drinking Water and Watershed Protection (DWWP) program. The most sustainable way to protect water supply is through demand management (conservation), which is promoted through outreach and stewardship initiatives provided by the RDN's Team WaterSmart, as well as the RDN Water Service Area's Water Conservation Plan 2020-2030. Rebates for well water testing, water smart landscaping, and rainwater harvesting further assist RDN residents to reduce water usage in high demand seasons. A new tiered system for water rates introduced in 2022/23 will help promote conservation by rewarding low water users with reduced rates and encouraging high water users to seek ways to use less. Additional planning and preparation initiatives will be introduced in the future to support water supply security.

## 12.0 Cross Connection Control

The RDN's Cross Connection Control Program was put in place to protect the public health by reducing the risk of contaminants flowing back into the public water supply. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

The RDN's Cross Connection Control Program addresses cross connection threats through operating policies and procedures, as well as assisting customers with backflow preventer selection, installation, testing, maintenance and reporting. The program receives its authority from *RDN Cross Connection Control Regulation Bylaw No. 1788*, and the *British Columbia Building Code, Part 7*, which requires that potable water be protected from contamination. Additionally,



a webpage has been established at <https://rdn.bc.ca/cross-connection-control-program> to educate RDN water service customers about cross connection hazards, and lists the relevant links to current standards and resources.

Two of the RDN's water system operators carry certification as backflow assembly testers through the British Columbia Water & Waste Association (BCWWA), and one operator is additionally certified as a Cross Connection Control Inspector.

### 13.0 Cyber Security

The RDN uses a multi-level approach to cyber-security. Corporate network security is employed via a universal threat management gateway that implements various methods of data security, which includes daily definition updates to block known cyber threats. In addition, all RDN PC's are protected with anti-virus software. RDN water systems are connected to the corporate network via IP-Sec VPN's for remote management by information technology and equipment operators. Future infrastructure upgrades will see our water systems located on segregated networks to limit the vulnerability from cybersecurity threats. All RDN employees are required to regularly complete extensive training on cyber security awareness.

### 14.0 Closing

An annual report for the year 2024 will be prepared and submitted to Island Health in the spring of 2025. Annual reports are also available on our website at: [www.rdn.bc.ca/whiskey-creek](http://www.rdn.bc.ca/whiskey-creek).



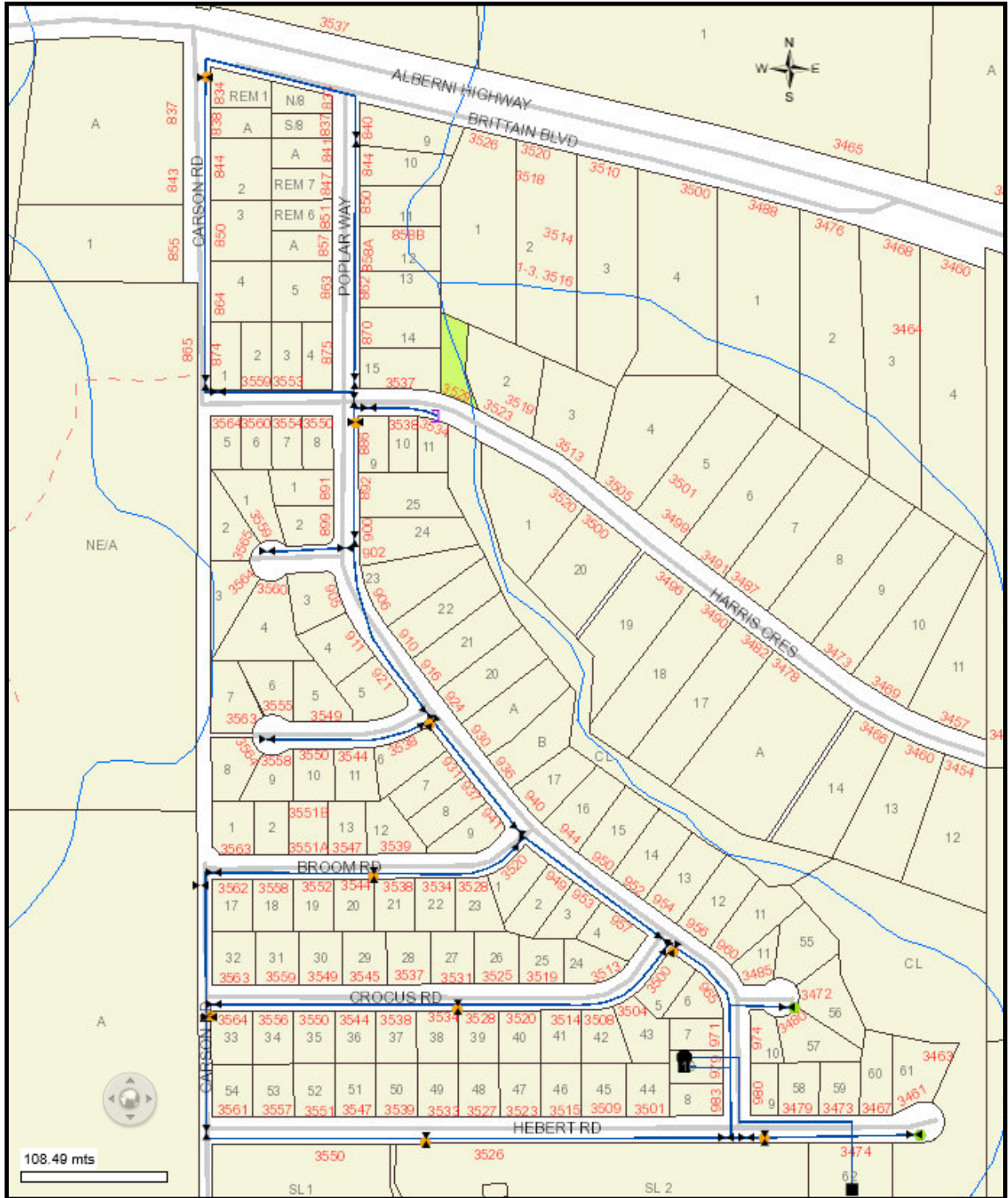
Land clearing and well site construction in Whiskey Creek

**APPENDIX A**

**MAP OF WHISKEY CREEK**

**WATER SERVICE AREA**

WHISKEY CREEK WATER SERVICE AREA



## **APPENDIX B**

### **WATER QUALITY TESTING RESULTS**

# WHISKEY CREEK WATER SERVICE AREA



## Facility Location:

979 Poplar Way, Qualicum Beach

**Facility Information:** Facility Type: 15-300 connections DWC

## Facility Sampling History:

<u>Site Name</u>	<u>Date Collected</u>	<u>Total Coliform</u>	<u>Total E. Coli</u>
844 Carson Road	4-Jan-23	LT1	LT1
Temporary Overland Water Main	4-Jan-23	LT1	LT1
Whiskey Creek Well Tag No 42538	4-Jan-23	LT1	LT1
3537 Harris Crescent	10-Jan-23	LT1	LT1
3533 Hebert Road	18-Jan-23	LT1	LT1
3564 Foxglove Road	25-Jan-23	LT1	LT1
844 Carson Road	8-Feb-23	LT1	LT1
Temporary Overland Water Main	8-Feb-23	LT1	LT1
Whiskey Creek Well Tag No 42538	8-Feb-23	LT1	LT1
3537 Harris Crescent	13-Feb-23	LT1	LT1
3533 Hebert Road	21-Feb-23	LT1	LT1
3564 Foxglove Road	28-Feb-23	LT1	LT1
844 Carson Road	7-Mar-23	LT1	LT1
Temporary Overland Water Main	7-Mar-23	LT1	LT1
Whiskey Creek Well Tag No 42538	7-Mar-23	LT1	LT1
3537 Harris Crescent	13-Mar-23	LT1	LT1
3533 Hebert Road	20-Mar-23	LT1	LT1
3564 Foxglove Road	27-Mar-23	LT1	LT1
844 Carson Road	3-Apr-23	LT1	LT1
3537 Harris Crescent	12-Apr-23	LT1	LT1
844 Carson Road	19-Apr-23	LT1	LT1
Whiskey Creek Well Tag No 42538	19-Apr-23	LT1	LT1
3533 Hebert Road	26-Apr-23	QRWRT	QRWRT
844 Carson Road	3-May-23	LT1	LT1
3537 Harris Crescent	10-May-23	LT1	LT1
Whiskey Creek Well Tag No 42538	10-May-23	LT1	LT1
3533 Hebert Road	15-May-23	LT1	LT1
3564 Foxglove Road	24-May-23	LT1	LT1
844 Carson Road	6-Jun-23	LT1	LT1
Whiskey Creek Well Tag No 42538	6-Jun-23	LT1	LT1
3537 Harris Crescent	13-Jun-23	LT1	LT1

3537 Harris Crescent	20-Jun-23	LT1	LT1
3564 Foxglove Road	27-Jun-23	LT1	LT1
3533 Hebert Road	4-Jul-23	LT1	LT1
Whiskey Creek Well Tag No 42538	4-Jul-23	LT1	LT1
3564 Foxglove Road	12-Jul-23	LT1	LT1
3537 Harris Crescent	18-Jul-23	LT1	LT1
844 Carson Road	26-Jul-23	LT1	LT1
3533 Hebert Road	1-Aug-23	LT1	LT1
Whiskey Creek Well Tag No 42538	1-Aug-23	LT1	LT1
844 Carson Road	8-Aug-23	LT1	LT1
3537 Harris Crescent	15-Aug-23	LT1	LT1
3564 Foxglove Road	23-Aug-23	LT1	LT1
844 Carson Road	13-Sep-23	LT1	LT1
3537 Harris Crescent	20-Sep-23	LT1	LT1
Whiskey Creek Well Tag No 42538	20-Sep-23	LT1	LT1
3564 Foxglove Road	27-Sep-23	LT1	LT1
3533 Hebert Road	3-Oct-23	LT1	LT1
3537 Harris Crescent	3-Oct-23	LT1	LT1
844 Carson Road	3-Oct-23	LT1	LT1
3533 Hebert Road	11-Oct-23	LT1	LT1
3537 Harris Crescent	18-Oct-23	LT1	LT1
Whiskey Creek Well Tag No 42538	18-Oct-23	LT1	LT1
3564 Foxglove Road	23-Oct-23	LT1	LT1
3533 Hebert Road	6-Nov-23	LT1	LT1
3564 Foxglove Road	15-Nov-23	LT1	LT1
844 Carson Road	20-Nov-23	LT1	LT1
Whiskey Creek Well Tag No 42538	20-Nov-23	LT1	LT1
3537 Harris Crescent	28-Nov-23	LT1	LT1
3533 Hebert Road	5-Dec-23	LT1	LT1
Whiskey Creek Well Tag No 42538	5-Dec-23	LT1	LT1
844 Carson Road	13-Dec-23	LT1	LT1
3537 Harris Crescent	20-Dec-23	LT1	LT1
3564 Foxglove Road	20-Dec-23	LT1	LT1

### **Interpreting Sample Reports**

In VIHA, the results of drinking water sampling are reported using the following coding system:

LT1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present

L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present