

REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2023



River's Edge

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

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Appendix A - Map of River's Edge Water Service Area

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response & Contingency Plan

1.0 Introduction

The following annual report describes the River's Edge Community Water Service Area (previously known as the Englishman River Community 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 River's Edge Water Service Area

The River's Edge Community Water Service Area was established in 2003 and is comprised of the River's Edge residential subdivision near the southern boundary of the City of Parksville. The water source for the service area comes from a series of groundwater wells located within the neighbourhood. The water source is chlorinated and stored in one reservoir. There are 152 water service connections in the River's Edge Water Service Area. A generator is available for emergency power outages. A map of the service area is provided in Appendix A for reference. In 2022, the name of the service area was officially changed from Englishman River to River's Edge Water Service Area.

2.1 Groundwater Wells

Groundwater production wells ER #2 and ER #3 are located at 2231 Rascal Lane, Parksville, B.C. Test well PW #1 is located on Peterson Road, and was converted to a monitoring well in 2005. Test Well PW #4 is located on Rivers Edge Drive and was converted to a provincial monitoring well in 2012.

Well / Name	Well Depth	In Use	Wellhead Protection	Treated/Untreated with Chlorine
ER #2	29.3 m	Yes	Yes	Treated
ER #3	32.6 m	Yes	Yes	Treated

2.2 Reservoirs

One dual-chambered concrete service reservoir is present at 890 Stonefly Close and has a capacity of 795 m³ (175,000 imperial gallons).

2.3 Distribution System

The water distribution system is summarized in the table below. Fire hydrants (24) are located throughout the system.

Watermain Material	Length of mains in service area	Prevalence in Water Service Area
Asbestos-concrete	none	n/a
PVC: 150mm or smaller	3.6 km	28.8%
200mm or larger	8.9 km	71.2%

Note: 'PVC' is poly-vinylchloride (plastic)

3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. Notably, the chlorine residual levels are tested weekly to ensure the absence of bacterial regrowth in the watermains. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli, Temperature, pH, Conductivity, Chlorine residual, Salinity, TDS
Semi-Monthly	BC Centre for Disease Control	Total coliforms, E.Coli
Quarterly	Bureau Veritas	Conductivity, Sodium, Chloride, TDS
Annual Source Water Testing (every Fall)	Bureau Veritas	Complete potability testing of raw well water (including T-Ammonia in 2012)
Annual Water System Testing (every Spring)	Bureau Veritas	Complete potability testing of distribution system (including T-Ammonia in 2012)

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/englishman-river. 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

Inquiries received from the River's Edge Water Service Area in 2023 were typically related to irrigation leaks, water quality protection, and conservation advice.



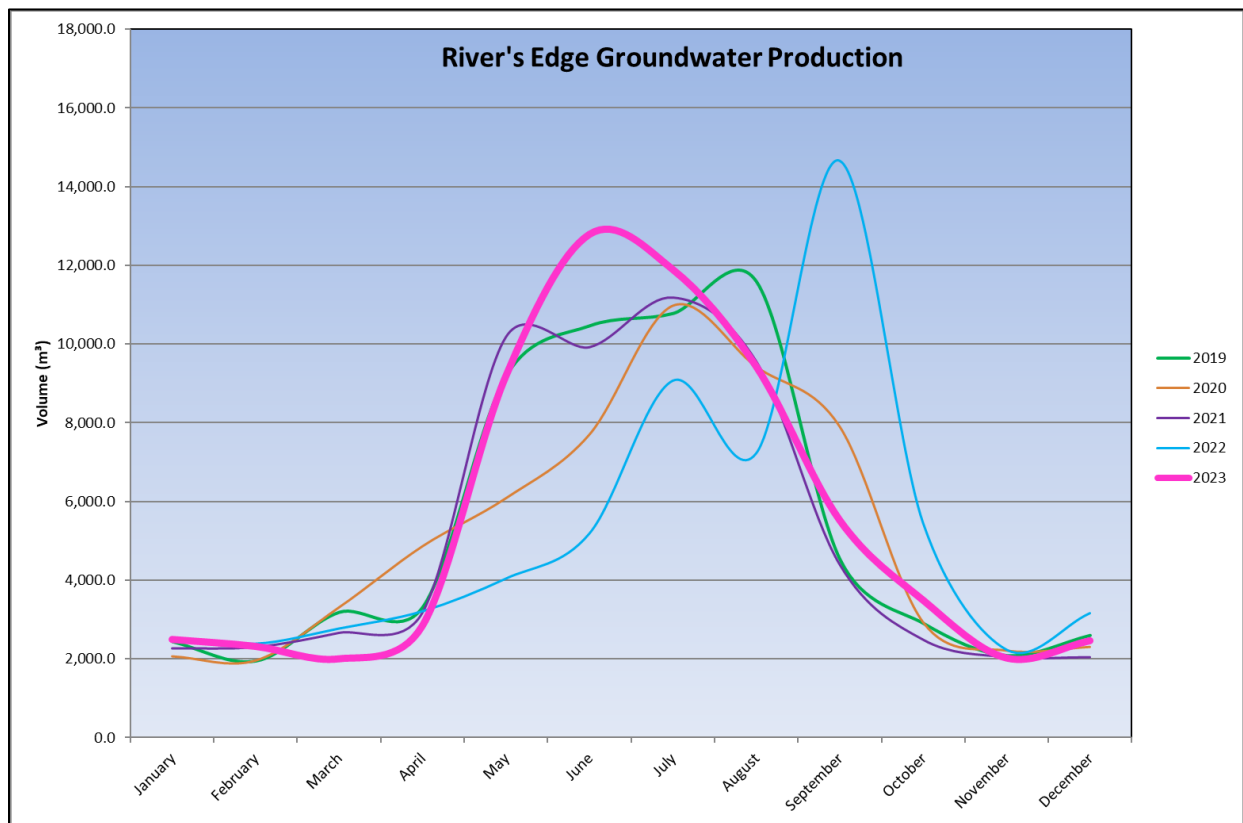
**Water Sampling
Station in
River's Edge**

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, ever.
High Turbidity Events	None	None, ever.
Equipment Malfunction	None	None.
Water Main Breaks	None	None.
Pump Failures	None	Temp power outages.

6.0 Groundwater Production and Consumption

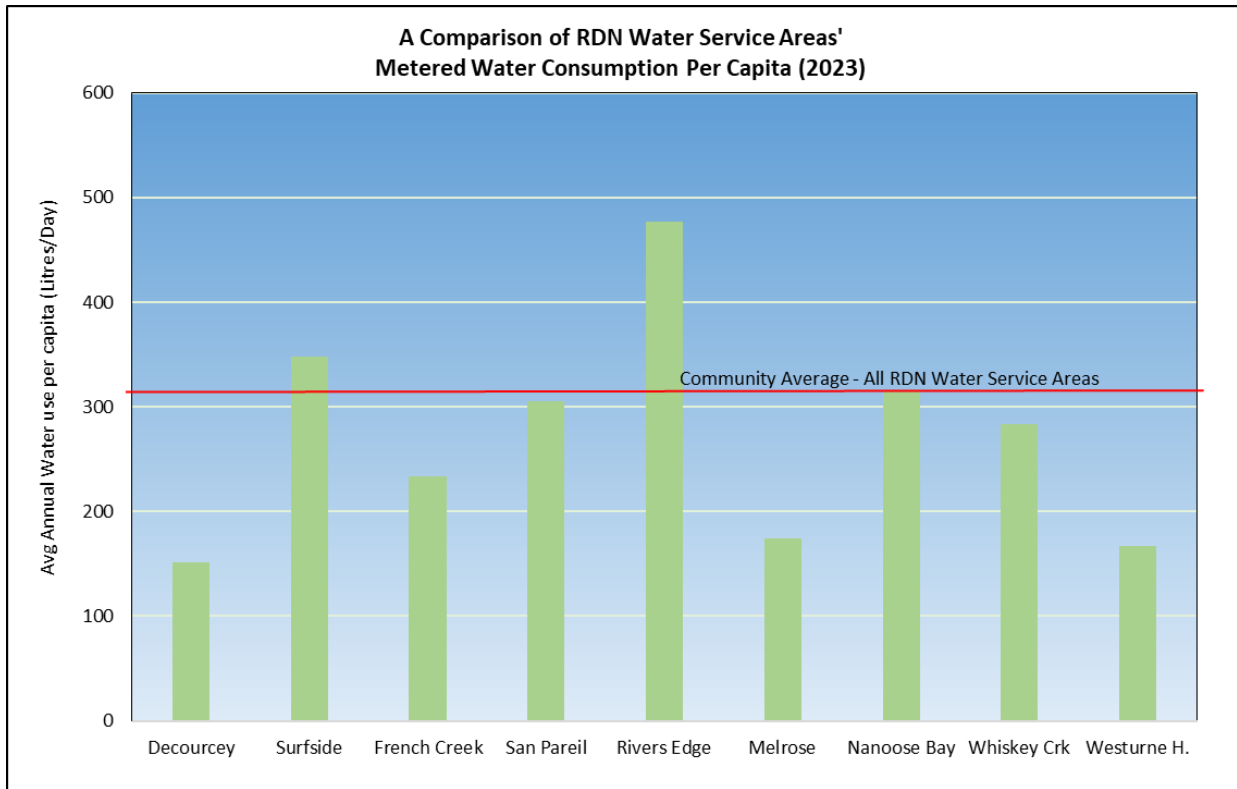
Monthly groundwater production in the River's Edge Water Service Area for the past 5 years is shown in the chart below. Water production in 2023 was above average in summer months compared to previous years, before returning to normal levels in the fall.



Consumption

In the Fall/Winter of 2023, the average usage per home in the River's Edge Water Service Area was 0.74 cubic metres per day (162.8 imperial gallons). In the summer, the average water usage was 1.94 cubic metres per day (426.8 imperial gallons). Based on these figures, the annual consumption per capita is

estimated to be 477 L/day (based on 2.4 people per household). This consumption is **52% higher** than the average of all other RDN water systems of 313 L/day/capita for 2023.



7.0 Maintenance Program

A weekly pump station inspection is 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 are serviced once per year (either 'A-level' or 'B-level' maintenance). The water storage reservoir is drained and cleaned as required, every 4-5 years. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

8.0 Operator Certification

The Regional District Water & Utility Services staff is 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

- Cleaned eastern half of water storage reservoir;
- Continued well site and transmission main infrastructure upgrade project preparation;
- Planned River's Edge water quality protection community engagement and petition projects;
- 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

- Organize and host water quality protection project community engagement events;
- Deliver service area petition for funding of River's Edge water quality protection project;
- Begin installing upgraded smart water meters throughout service area to aid in conservation and leak detection;
- Complete irrigation checks for high-water users;
- Continue watermain flushing program and hydrant maintenance;
- Continue leak detection equipment utilization program;
- Introduce new watermain flushing and metering procedures to promote conservation;
- Continue valve maintenance program;
- Continue the 2020-2030 DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.



**Watering Restriction
Sign on Kaye Road**

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.

11.0 Supply Security

The RDN continues to effectively manage water supply in River's Edge in response to ongoing demand and the effects of climate change. This service area is almost completely built out so growth in demand is not expected, though initiatives to provide adequate long-term supply and resiliency for groundwater remain a high priority. Improvements to groundwater infrastructure are currently being developed to address emergent issues with water quality, 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. 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 helps 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 received certification as backflow assembly testers through the British Columbia Water & Waste Association (BCWWA), and one operator is additionally certified as a backflow 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/englishman-river.



APPENDIX A

MAP OF RIVER'S EDGE

WATER SERVICE AREA

APPENDIX B

WATER QUALITY TESTING RESULTS

RIVER'S EDGE COMMUNITY WATER SYSTEM



Facility Location: 1116 Herring Gull Way

Facility Information: Facility Type: 15-300 connections

Facility Sampling History:

<u>Date Collected</u>	<u>Total Coliform</u>	<u>Total E. Coli</u>	<u>Site Name</u>
4-Jan-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
16-Jan-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
8-Feb-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
13-Feb-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
7-Mar-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
15-Mar-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
5-Apr-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
12-Apr-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
10-May-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
6-Jun-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
13-Jun-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
4-Jul-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
12-Jul-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
8-Aug-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
6-Sep-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
13-Sep-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
4-Oct-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
18-Oct-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
8-Nov-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
22-Nov-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road
6-Dec-23	LT1	LT1	Rivers Edge Sample Port - 2235 Rascal Lane
13-Dec-23	LT1	LT1	Rivers Edge Sample Port - 1969 Kaye Road

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