

REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2024



San Pareil

Water Service Area

June 2025



REGIONAL DISTRICT OF NANAIMO

Water & Utility Services Department

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

Table of Contents

1.0	Introduction	1
2.0	San Pareil Water Service Area.....	1
2.1	Groundwater Wells	1
2.2	Reservoirs.....	1
2.3	Distribution System	1
3.0	Water Sampling and Testing Program	2
4.0	Water Quality - Source Water and Distribution System.....	2
5.0	Water Quality Inquiries and Complaints.....	3
6.0	Groundwater Production and Consumption	3
7.0	Maintenance Program	4
8.0	Operator Certification.....	4
9.0	Water Service Area Projects	5
9.1	2024 Completed Studies & Projects.....	5
9.2	2025 Proposed Projects & Upgrades	5
10.0	Emergency Response & Contingency Plan.....	5
11.0	Supply Security	5
12.0	Cross Connection Control (CCC).....	6
13.0	Cyber Security	7
14.0	Closing.....	7

Appendix A - Map of San Pareil Water Service Area

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response & Contingency Plan

1.0 Introduction

The following annual report describes the San Pareil Water Service Area and summarizes the water quality and production data from 2024. 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 2025.

2.0 San Pareil Water Service Area

The San Pareil Water Service Area was established in 1999 when the RDN acquired the existing Bubbling Springs Water Utility. This water system is located to the northeast of the Englishman River Bridge on the east side of the City of Parksville. There are 298 water service connections in San Pareil. The water source for the San Pareil Water Service Area comes from a series of groundwater wells located in the well field on Plummer Road. The well water passes through an upgraded ultraviolet disinfection process, is chlorinated, and is then stored in two reservoirs. A back-up generator is present at the pumphouse, should it be required. A map of the San Pareil Water System is provided in Appendix A.

2.1 Groundwater Wells

Two active groundwater production wells are present in the well field at 1090 Plummer Road, Parksville, B.C. Well #2 was closed in 2012. Well #3 is utilized as a monitoring well, but also serves as a backup well to Well #4.

Well / Name	Well Depth	Wellhead Protection In Place	Treated/Untreated with Chlorine
#1	4.4 m	Yes	Treated
#2	5.5 m	Closed	Not in use
#3	7.0 m	Yes	Treated
#4	5.7 m	Yes	Treated

2.2 Reservoirs

Two concrete service reservoirs are present at 1090 Plummer Road, and have a capacity of 340 m³ (75,000 imperial gallons) each.

2.3 Distribution System

The water distribution system in San Pareil is summarized in the table below. Fire hydrants (30) are located throughout the water service area.

Watermain Material	Length of mains in NBP Water Service Area	Prevalence in Water Service Area
AC: 150mm or smaller	3.3 km	48%
AC: 200mm or larger	n/a	n/a
PE: 50mm or smaller	0.7 km	10%
PVC: 150mm or smaller	0.3 km	4%
PVC: 200mm or larger	2.6 km	38%

Note: 'AC' is Asbestos-Concrete, 'PVC' is poly-vinylchloride (plastic), 'PE' is polyethylene

3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the water 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, Turbidity, TDS
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Annual Source Water Testing (every Fall)	Bureau Veritas	Complete potability testing of raw well water, including T-Ammonia, UVT
Annual System Water Testing (every Spring)	Bureau Veritas	Complete potability testing of distribution system, including T-Ammonia

4.0 Water Quality - Source Water and Distribution System

Up-to-date water quality test reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca/san-pareil. Tables of water quality testing results for both the source water and the distribution system are provided in Appendix B of this report.



**San Pareil
Well Site**

5.0 Water Quality Inquiries and Complaints

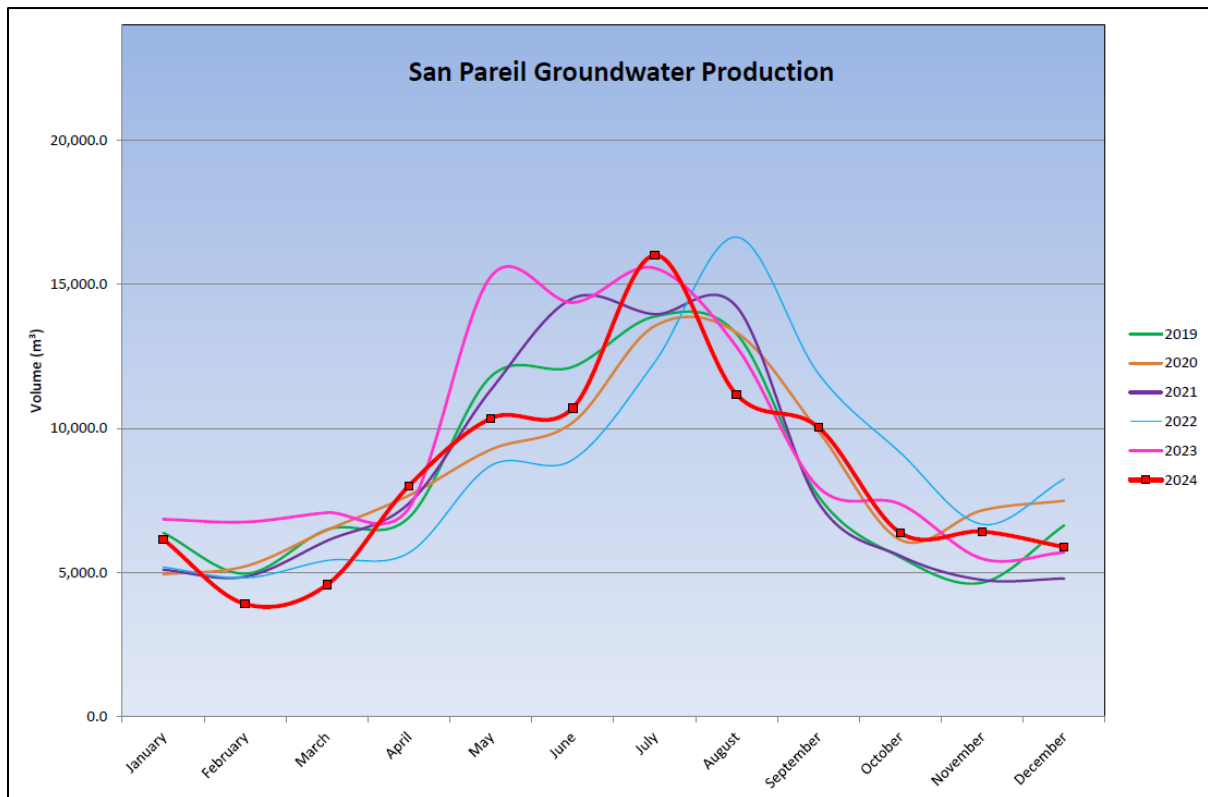
Inquiries received from the San Pareil Water Service Area in 2024 were typically related to irrigation leaks, water quality protection, and conservation advice.

A summary of the water system incidents in 2024 is given in the table below.

Activity in 2024	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	None	None

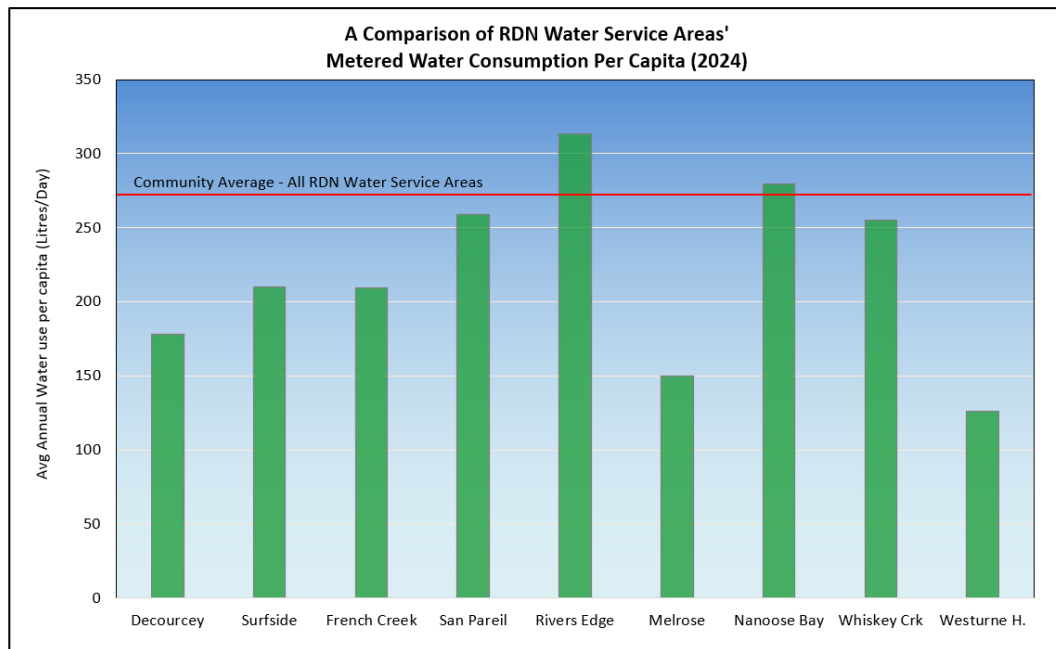
6.0 Groundwater Production and Consumption

Monthly groundwater production in the San Pareil Water Service Area for the past 6 years is shown in the chart below.



Consumption

In the fall/winter of 2023/2024, the average usage per home in the San Pareil Water Service Area was 0.41 cubic metres per day (90 imperial gallons). In the summer of 2024, the average water usage was 1.05 cubic metres per day (231 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 259 L/day (based on 2.4 people/household). This consumption is **4% less** than the average of all the other RDN water systems of 270 L/day/capita in 2024.



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 reservoirs are cleaned once every 2-3 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 | ✓ Chlorine Handling | ✓ Confined Space Awareness |
| ✓ Water Distribution | ✓ WHMIS (Workplace Hazardous Material Information System) | ✓ Fall Protection |
| ✓ Wastewater Collection | ✓ TDG (Transportation of Dangerous Goods) | ✓ First Aid |
| ✓ Cross Connection Control | | ✓ Silica Awareness |
| ✓ Asbestos Awareness | | ✓ Cyber Security |

9.0 Water Service Area Projects

9.1 2024 Completed Studies & Projects

- Completed condition assessment of several sections of asbestos-concrete pipe;
- Began Shorewood watermain looping project design;
- Chlorine analyzer renewal;
- Corresponded with residents regarding water conservation;
- Completed irrigation checks for high water users;
- Counselling residents regarding water leak repairs and bill adjustments;
- Enforced outdoor watering restrictions during summer months;
- Continued the 2020-2030 Water Conservation Plan;
- Followed Cross Connection Control program to reduce backflow prevention risks;
- Completed regular watermain flushing and hydrant maintenance;
- Continued valve maintenance program; and
- Maintained a high level of water quality.

9.2 2025 Proposed Projects & Upgrades

- Complete Shorewood Drive watermain looping project construction;
- Hach equipment service and calibrations;
- Complete irrigation checks for high water users;
- Continue watermain flushing program and hydrant maintenance;
- Continue valve maintenance program;
- Continue the 2020-2030 DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

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 2024, 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 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 tiered system for water rates (introduced in 2023) helps promote conservation by rewarding low water users with reduced rates and encouraging high water users to seek ways to consume less. Additional planning and preparation initiatives will be introduced in the future to support water supply security.

12.0 Cross Connection Control (CCC)

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 are certified backflow assembly testers through the British Columbia Water & Waste Association (BCWWA), and one operator is additionally certified as a Cross Connection Control Inspector.



**San Pareil
Reservoir #2**

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 RDN 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 2025 will be prepared and submitted to Island Health in the Spring of 2026. Annual reports are also available on the RDN website: www.rdn.bc.ca/san-pareil.



APPENDIX B

WATER QUALITY TESTING RESULTS

SAN PAREIL WATER SERVICE AREA



Facility Location: Parksville

Facility Information: Facility Type: 15-300 connections

Facility Sampling History:

Site Name	Date Collected	Total Coliform	Total E. Coli
793 SAN MALO CRESCENT	3-Jan-2024	LT1	LT1
Water Hauling Tank Treated water	10-Jan-2024	LT1	LT1
995 Sabine Road	24-Jan-2024	LT1	LT1
1090 PLUMMER ROAD	31-Jan-2024	LT1	LT1
962 Ballenas Road	31-Jan-2024	LT1	LT1
793 SAN MALO CRESCENT	6-Feb-2024	LT1	LT1
Water Hauling Tank Treated water	6-Feb-2024	LT1	LT1
962 Ballenas Road	14-Feb-2024	LT1	LT1
995 Sabine Road	21-Feb-2024	LT1	LT1
995 Sabine Road	28-Feb-2024	LT1	LT1
793 SAN MALO CRESCENT	4-Mar-2024	LT1	LT1
Water Hauling Tank Treated water	5-Mar-2024	LT1	LT1
1090 PLUMMER ROAD	19-Mar-2024	LT1	LT1
793 SAN MALO CRESCENT	19-Mar-2024	LT1	LT1
962 Ballenas Road	27-Mar-2024	LT1	LT1
793 SAN MALO CRESCENT	10-Apr-2024	LT1	LT1
Water Hauling Tank Treated water	10-Apr-2024	LT1	LT1
962 Ballenas Road	17-Apr-2024	LT1	LT1
1090 PLUMMER ROAD	23-Apr-2024	LT1	LT1
995 Sabine Road	29-Apr-2024	LT1	LT1
793 SAN MALO CRESCENT	8-May-2024	LT1	LT1
962 Ballenas Road	14-May-2024	LT1	LT1
Water Hauling Tank Treated water	15-May-2024	LT1	LT1
1090 PLUMMER ROAD	21-May-2024	LT1	LT1
995 Sabine Road	28-May-2024	LT1	LT1
793 SAN MALO CRESCENT	5-Jun-2024	LT1	LT1
962 Ballenas Road	12-Jun-2024	LT1	LT1
1090 PLUMMER ROAD	18-Jun-2024	LT1	LT1
995 Sabine Road	25-Jun-2024	LT1	LT1
1090 PLUMMER ROAD	2-Jul-2024	LT1	LT1
962 Ballenas Road	9-Jul-2024	LT1	LT1

Site Name	Date Collected	Total Coliform	Total E. Coli
Water Hauling Tank Treated water	9-Jul-2024	LT1	LT1
1090 PLUMMER ROAD	16-Jul-2024	LT1	LT1
995 Sabine Road	23-Jul-2024	LT1	LT1
793 SAN MALO CRESCENT	7-Aug-2024	LT1	LT1
Water Hauling Tank Treated water	7-Aug-2024	LT1	LT1
962 Ballenas Road	14-Aug-2024	LT1	LT1
1090 PLUMMER ROAD	20-Aug-2024	LT1	LT1
995 Sabine Road	26-Aug-2024	LT1	LT1
793 SAN MALO CRESCENT	4-Sep-2024	LT1	LT1
Water Hauling Tank Treated water	10-Sep-2024	LT1	LT1
962 Ballenas Road	11-Sep-2024	LT1	LT1
1090 PLUMMER ROAD	18-Sep-2024	LT1	LT1
995 Sabine Road	24-Sep-2024	LT1	LT1
793 SAN MALO CRESCENT	1-Oct-2024	LT1	LT1
Water Hauling Tank Treated water	2-Oct-2024	LT1	LT1
962 Ballenas Road	7-Oct-2024	LT1	LT1
1090 PLUMMER ROAD	16-Oct-2024	LT1	LT1
995 Sabine Road	23-Oct-2024	LT1	LT1
Water Hauling Tank Treated water	5-Nov-2024	LT1	LT1
793 SAN MALO CRESCENT	6-Nov-2024	LT1	LT1
1090 PLUMMER ROAD	25-Nov-2024	LT1	LT1
793 SAN MALO CRESCENT	25-Nov-2024	LT1	LT1
962 Ballenas Road	26-Nov-2024	LT1	LT1
793 SAN MALO CRESCENT	2-Dec-2024	LT1	LT1
962 Ballenas Road	10-Dec-2024	LT1	LT1
Water Hauling Tank Treated water	10-Dec-2024	LT1	LT1
1090 PLUMMER ROAD	16-Dec-2024	LT1	LT1
995 Sabine Road	16-Dec-2024	LT1	LT1

Interpreting Sample Reports

At Island Health, the results of drinking water sampling are reported using the following coding system:

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