

REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2019



San Pareil Water Service Area

June 2020

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Appendix A - Map of San Pareil Water Service Area

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1. Introduction

The following annual report describes the San Pareil Water Service Area and summarizes the water quality and production data from 2019. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response Plan, and the Cross Connection Control Program. This report is to be submitted to Island Health by the spring of 2020.

2. San Pareil Water System

The San Pareil Water Service Area was established in 1999 when the RDN acquired the existing Bubbling Springs Water Utility. This system is located to the northeast of the Englishman River Bridge on the east side of the City of Parksville. There are 288 water service connections in San Pareil. The water source for the San Pareil Water Service Area comes from a series of groundwater wells located on Plummer Road. A map of the San Pareil Water System is provided in Appendix A.

2.1 Groundwater Wells

Two groundwater production wells are in-use at 1090 Plummer Road, Parksville, B.C. Well #2 was closed in 2012. Well #3 is used as a monitoring well, but also serves as a backup to Well #4. The water supply is disinfected with ultraviolet light, chlorinated, and stored in two reservoirs. A back-up generator is present at the pumphouse, should it be required.

Well / Name	Well Depth	Wellhead Protection	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, as summarized in the table below, is comprised of 6.6 km of asbestos-concrete and PVC watermains. Twenty (20) fire hydrants are present in the service area.

Watermain Material	Length of mains in San Pareil Water Service Area	Prevalence in Water Service Area
AC: 150mm or smaller	3.4 km	52%
AC: 200mm or larger	n/a	n/a
PE: 50mm or smaller	0.7 km	10%
PVC: 150mm or smaller	0.2 km	2%
PVC: 200mm or larger	2.3 km	36%

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

3. 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 water mains. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli, Temp, pH, Conductivity, Chlorine residual, Salinity, Turbidity, TDS Iron and Manganese (Monthly)
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Annual Source Water Testing (every Fall)	Bureau Veritas (formerly Maxxam)	Complete potability testing of raw well water, including T. Ammonia, UVT
Annual System Water Testing (every Spring)	Bureau Veritas (formerly Maxxam)	Complete potability testing of distribution system, including T. Ammonia

4. 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/san-pareil. 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. Water Quality Inquiries and Complaints

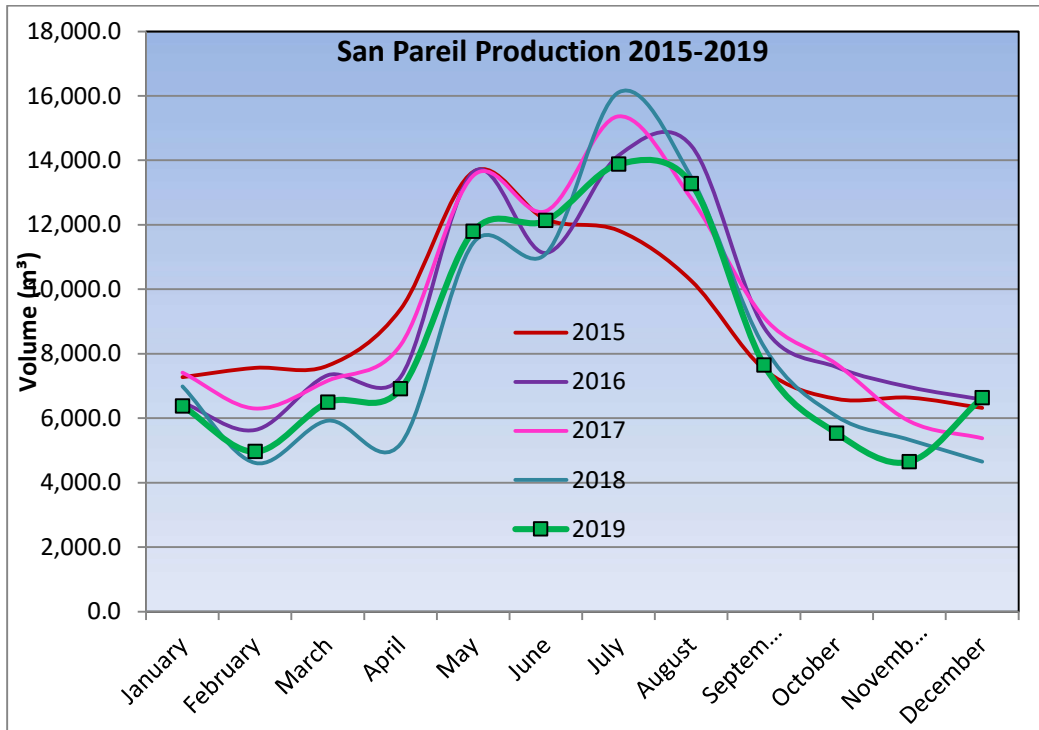
In 2019, a few complaints were received related to high water bills. Refunds were issued under the RDN’s Leak Adjustment Policy. Inquiries have been received for years from nearby property owners wanting to connect to the San Pareil water system. In May 2019, a group-funded construction project was proposed, and a public meeting was held to answer questions. Petitions were subsequently mailed to the group of 41 unserved property owners, but only 24% responded in favour of the project. Without at least 50% of the property owners in favour, the project did not proceed. Moving forward, property owners must now contact the RDN on an individual basis for watermain extensions at their own expense.

A summary of the water system incidents in 2019 is given in the table below.

Activity in 2019	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. Groundwater Production and Consumption

The monthly groundwater production for San Pareil for the past 5 years is shown in the chart below. In 2019, groundwater production was below average overall in comparison to previous years.



In the Fall/Winter of 2019, the average usage per home in San Pareil was 0.45 cubic metres per day (99 imperial gallons). In the summer, the average water usage was 1.13 cubic metres per day (248.6 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 **4% less** than all the other RDN water system averages of 295 L/day/capita in 2019.

7. 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. Fire hydrants are serviced once per year (either 'A-level' or 'B-level' maintenance) in the spring. The reservoirs are cleaned every 2-3 years. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

8. 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) | ✓ Traffic Control |
| ✓ Wastewater Collection | ✓ TDG (Transportation of Dangerous Goods) | ✓ Fall Protection |
| ✓ Cross Connection Control | | ✓ First Aid |
| ✓ Asbestos Awareness | | ✓ Silica Awareness |

9. Water System Projects

9.1 2019 Completed Studies & Projects

- Adopted a Capital Cost Charge for those wishing to join the water system in the future;
- Held an Open House about water system expansion for all unserved property owners in San Pareil (who have their own wells);
- Mailed petitions to the aforementioned San Pareil property owners to determine the level of support for water system expansion;
- Completed SCADA integration at the pumphouse site;
- Installed Aquifer Protection Signage within the service area;
- Began an overall Water System Condition Assessment;
- Corresponded with residents regarding water conservation;
- Enforced outdoor sprinkling regulations;
- Completed irrigation checks for high-water users;
- Advised residents regarding water leak repairs;
- Completed the 10-year Drinking Water Action Plan;
- Adopted a Cross Connection Control Bylaw;
- Created a Cross Connection Control webpage and educational brochure;
- Completed regular watermain flushing and hydrant maintenance;
- Maintained a high level of water quality; and
- Continued quality control through regular testing and monitoring of water system.



San Pareil Well Site

9.2 2020 Proposed Projects & Upgrades

- Advise property owners that the water system petition results were not sufficient to support the expansion of the water system;
- Complete San Pareil Reservoir #1 cleaning and steel ladder installation;
- Update asset database with new assets;
- Continue watermain flushing program and hydrant maintenance;
- Calibrate and service all Hach spectrophotometer lab equipment;
- Implement a Water Systems SCADA Master Plan;
- Review well protection plans;
- Complete a Water System Condition Assessment report;
- Begin the next 10-year DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

10. **Emergency Response Plan**

The Regional District Emergency Response Plan (ERP) 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 ERP was reviewed and updated in 2019, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERP is also attached to this report in Appendix C.

11. **Cross Connection Control**

In 2017, a more robust Cross Connection Control Plan was prepared that fully defines the CCC program, including standard operating procedures, plumbing code references, reporting procedures, survey schedules, backflow prevention standards, detailed installation schematics, blank test forms, testing reminders, and non-compliance letters. Two RDN Operators achieved their Backflow Assembly Tester re-certification in 2019. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

In 2019, a stand-alone Cross Connection Control Bylaw was adopted that contains definitions, authorizations, applications, liability, rules, regulations, testing requirements, and reporting requirements. The bylaw addresses retrofits, prohibitions, special circumstances, reclaimed water use, alternate water sources, failure to comply, inspections, testing, offences, penalties and more. A webpage has been established on the Water Services website that educates RDN customers about cross connections and lists the relevant links to current standards and resources.

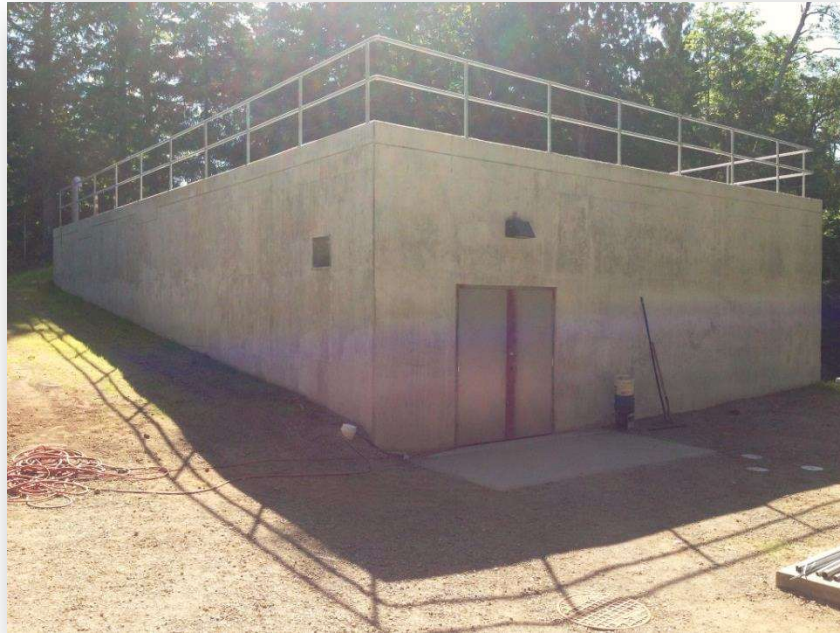
12. **Cyber Security**

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.

13. Closing

An annual report for the year 2020 will be prepared and submitted to Island Health in the Spring of 2021. Annual reports are also available on our website at: <https://www.rdn.bc.ca/san-pareil>.



**San Pareil
Reservoir #2**

APPENDIX A

**MAP OF SAN PAREIL
WATER SERVICE AREA**

SAN PAREIL WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

SAN PAREIL WWS



Facility Location:

1090 Plummer Road
Parksville

Facility Information:

Facility Type: DWC

Facility Sampling History:

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
995 Sabine Road, (Bubbling Springs) Parksville, BC	17-Dec-2019	L1	L1
Behind 1190 Plummer Road (on Terrien Way)	10-Dec-2019	L1	L1
962 Ballenas Road	10-Dec-2019	L1	L1
793 San Malo Crescent , Parksville	3-Dec-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	27-Nov-2019	L1	L1
995 Sabine Road, (Bubbling Springs) BC	20-Nov-2019	L1	L1
793 San Malo Crescent, Parksville	5-Nov-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	23-Oct-2019	L1	L1
995 Sabine Road, (Bubbling Springs) BC	16-Oct-2019	L1	L1
962 Ballenas Road	9-Oct-2019	L1	L1
793 San Malo Crescent, Parksville	1-Oct-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville BC	23-Sep-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	16-Sep-2019	L1	L1
962 Ballenas Road	11-Sep-2019	L1	L1
793 San Malo Crescent, Parksville	4-Sep-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	28-Aug-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville, BC	21-Aug-2019	L1	L1
962 Ballenas Road	14-Aug-2019	L1	L1
793 San Malo Crescent, Parksville	7-Aug-2019	L1	L1
793 San Malo Crescent, Parksville	7-Aug-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	24-Jul-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville, BC	17-Jul-2019	L1	L1
962 Ballenas Road	10-Jul-2019	L1	L1

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
793 San Malo Crescent, Parksville	3-Jul-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	19-Jun-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville, BC	19-Jun-2019	L1	L1
962 Ballenas Road	12-Jun-2019	L1	L1
793 San Malo Crescent, Parksville	5-Jun-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	22-May-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville BC	22-May-2019	L1	L1
962 Ballenas Road	15-May-2019	L1	L1
793 San Malo Crescent , 793 San Malo Crescent, Parksville	8-May-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville, BC	17-Apr-2019	L1	L1
962 Ballenas Road	10-Apr-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	3-Apr-2019	L1	L1
793 San Malo Crescent, Parksville	3-Apr-2019	L1	L1
793 San Malo Crescent, Parksville	13-Mar-2019	L1	L1
962 Ballenas Road	13-Mar-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	6-Mar-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville, BC	6-Mar-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville, BC	20-Feb-2019	L1	L1
793 San Malo Crescent, Parksville	13-Feb-2019	L1	L1
962 Ballenas Road	13-Feb-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	6-Feb-2019	L1	L1
962 Ballenas Road	30-Jan-2019	L1	L1
Behind 1190 Plummer Rd (on Terrien Way)	23-Jan-2019	L1	L1
995 Sabine Road, (Bubbling Springs) Parksville, BC	16-Jan-2019	L1	L1
793 San Malo Crescent, Parksville	9-Jan-2019	L1	L1

Interpreting Sample Reports

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

- L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- OG Overgrown - Meaning: Too many background bacteria to give an accurate count
- EST Estimated Count
- A Sample not tested; Too long in transit
- C Sample leaked/broken in transit
- D Sample not tested; No collection date given
- T Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.
- NS No sample received with requisition