

REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2019



Descanso Bay Regional Park Water System



June 2020

Table of Contents

1.	Introduction.....	1
2.	Descanso Bay Regional Park Water System	1
2.1	Groundwater Well	1
2.2	Storage.....	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.	Groundwater Production and Consumption.....	2
7.	Maintenance Program.....	3
8.	Operator Certification	3
9.	Water System Projects	3
9.1	2019 Completed Studies & Projects.....	3
9.2	2020 Proposed Projects & Upgrades.....	4
10.	Emergency Response Plan.....	4
11.	Cross Connection Control.....	4
12.	Cyber Security	4
13.	Closing	5

Appendix A - Map of Descanso Bay Regional Park Water System

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response Plan

1. Introduction

The following annual report describes the Descanso Bay Regional Park Water System and 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. Descanso Bay Regional Park Water System

The Regional District acquired the Descanso Bay Regional Park property in 2002 from the Coastal Community Credit Union. The park is accessed from Taylor Bay Road and comprises an area of 16 hectares (40 acres) on the west side of Gabriola Island. The water source comes from one groundwater well located within the park and is accessed through an outside tap located at the treatment building. The water is filtered, disinfected with ultraviolet radiation, and stored in a pressure tank. A portable generator is available for emergency power outages. A map of the Descanso Bay Regional Park Water System is provided in Appendix A for reference.

2.1 Groundwater Well

The Descanso Bay Regional Park well is 54.8 metres deep and located approximately 50 metres northwest of the Park Office. The well water is filtered with a 5 and 10 micron filter, and then disinfected with UV (ultraviolet) radiation.

2.2 Storage

The 2,000 gallon cistern was removed from behind the treatment building. Water storage is now limited to the 40 gallon (0.2 m³) pressure tank inside the treatment building.

2.3 Distribution System

The water distribution system is comprised of 675 metres of 3-inch PVC (poly-vinylchloride) pipe. There are no fire hydrants in this water system.

**Descanso Bay Park
Treatment Building**



3. Water Sampling and Testing Program

Water sampling and testing is carried out monthly from a standpipe in the water system. The following table includes a summary of all testing:

Timing	Location	Tests
Monthly (from May to Sept)	BC Centre for Disease Control	Total coliforms, E.Coli
Quarterly (from Oct to April)	BC Centre for Disease Control	Total coliforms, E.Coli
Annually (October)	Bureau Veritas (formerly Maxxam) Labs	Complete potability testing of raw well water at wellhead, including UV Transmittance
Annually (May)	Bureau Veritas (formerly Maxxam) Labs	Complete potability testing of treated water

4. Water Quality - Source Water and Distribution System

Water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B. Bacteriological results are posted on the RDN website at <https://www.rdn.bc.ca/descanso-bay-regional-park-water-system>

5. Water Quality Inquiries and Complaints

No complaints were received from the Descanso Bay Regional Park Water System in 2019. Inquiries were limited to seasonal campground hours.

6. Groundwater Production and Consumption

A water meter was installed at the wellhead near the end of 2019. The total volume of groundwater pumped from the Descanso Bay Regional Park well is estimated to be 450 cubic metres for 2019. The campground is only used seasonally.



7. Maintenance Program

A daily pump station inspection is carried out to reduce or eliminate the risk of contamination and system failure. 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 Park Operator has the Small Water Systems Operator certification. 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

- Installed a water meter in the well pumphouse;
- Removed the water storage cistern and upgraded the pressure tank to a larger size;
- Received groundwater license from FLNRORD, and updated the well plate with the new one issued;
- Completed the 10-year Drinking Water Action Plan;
- Adopted a Cross Connection Control Bylaw;
- Created a Cross Connection Control webpage and educational brochure;
- Maintained a high level of water quality; and
- Continued quality control through regular testing and monitoring of water system.



9.2 2020 Proposed Projects & Upgrades

- Continue maintenance program;
- Review well protection plan; and
- Begin the next 10-year DWWP Water Conservation Plan.

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. The Descanso Bay Regional Park Water System Annual Report is also available on our website at: <https://www.rdn.bc.ca/descanso-bay-regional-park-water-system> .



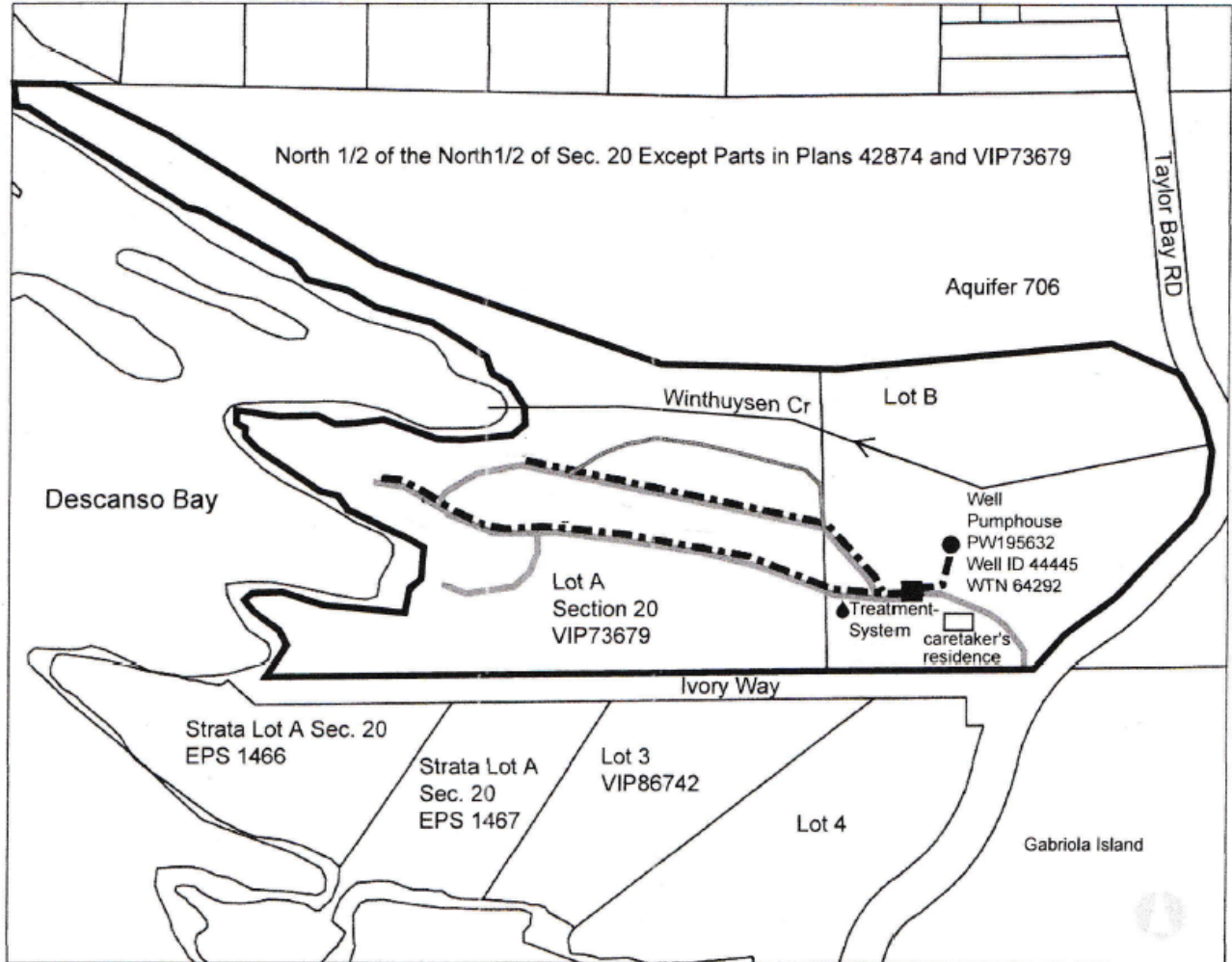
North Cove, Gabriola Island

APPENDIX A

MAP OF DESCANSO BAY REGIONAL PARK

WATER SYSTEM

DESCANSO BAY REGIONAL PARK WATER SYSTEM



APPENDIX B

WATER QUALITY TESTING RESULTS

DESCANSO BAY REGIONAL PARK WATER SYSTEM


Facility Location:

595 Taylor Bay Road
Gabriola Island

Facility Information:

Facility Type: DWS

Facility Sampling History:

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
Standpipe #4 - Descanso, 595 Taylor Bay Road	18-Dec-2019	L1	L1
Descanso Bay - Stand pipe #5, 595 Taylor Bay Rd	12-Dec-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	12-Dec-2019	3	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	6-Nov-2019	L1	L1
Standpipe #3 - Descanso Bay , 595 Taylor Bay Rd	6-Nov-2019	L1	L1
Standpipe #4 Descanso Bay, 595 Taylor Bay Rd	6-Nov-2019	L1	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	16-Oct-2019	L1	L1
Standpipe #3 - Descanso Bay , 595 Taylor Bay Rd	16-Oct-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	16-Oct-2019	L1	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	5-Sep-2019	L1	L1
Standpipe #3 - Descanso Bay , 595 Taylor Bay Rd	5-Sep-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	5-Sep-2019	L1	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	1-Aug-2019	L1	L1
Standpipe #3 - Descanso Bay , 595 Taylor Bay Rd	1-Aug-2019	L1	L1
Standpipe #4 Descanso Bay, 595 Taylor Bay Rd	1-Aug-2019	L1	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	18-Jul-2019	L1	L1
Standpipe #3 - Descanso Bay, 595 Taylor Bay Rd	18-Jul-2019	L1	L1
Standpipe #4 Descanso Bay, 595 Taylor Bay Rd	18-Jul-2019	L1	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	6-Jun-2019	L1	L1
Standpipe #3 - Descanso Bay , 595 Taylor Bay Rd	6-Jun-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	6-Jun-2019	L1	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	9-May-2019	L1	L1
Standpipe #3 - Descanso Bay , 595 Taylor Bay Rd	9-May-2019	L1	L1
Standpipe #3 - Descanso Bay , 595 Taylor Bay Rd	9-May-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	9-May-2019	L1	L1
AUDIT Descanso Bay Regional Park (Manager's Cabin), 595 Taylor Bay Rd	2-May-2019	L1	L1
Stand pipe # 5 - Descanso Bay, 595 Taylor Bay Rd	10-Apr-2019	L1	L1

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
Standpipe #3 - Descanso Bay, 595 Taylor Bay Rd	10-Apr-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	10-Apr-2019	L1	L1
Stand pipe #5 - Descanso Bay, 595 Taylor Bay Rd	7-Mar-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	7-Mar-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	6-Feb-2019	L1	L1
Standpipe #4 - Descanso Bay, 595 Taylor Bay Rd	10-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