

Regional District of Nanaimo

**ARBUTUS
PARK**

**Water Local Service Area
Annual Report**

2007



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Appendix A - Map of Arbutus Park Water Local Service Area

Appendix B - Water Quality Testing Results

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1. Introduction

The following annual report describes the Arbutus Park Water Local Service Area and summarizes the water quality and production data from 2007. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, the Emergency Response Plan, and the Cross Connection Control Program.

This report is to be submitted to the Vancouver Island Health Authority by the Spring of 2008.

2. Arbutus Park Water System

The Arbutus Park Water Service Area was established in 1983 and comprises an area lying north and south of Powder Point Road, near Garry Oak Drive, Anchor Way, and Florence Drive on the Nanoose Peninsula. The water source for the Arbutus Park Water Service Area comes from a series of groundwater wells located nearby. The water source is chlorinated and stored in the Arbutus Park reservoir and in the shared Fairwinds reservoirs. A map of the Arbutus Park Water System is provided in Appendix A for reference.

2.1 Groundwater Wells

An abandoned groundwater production well is present at the corner of Powder Point Road and Rowland Road in Nanoose Bay, B.C. The well was closed permanently in 2005 due to inclining mineral concentrations, and declining production. Well closure was completed by Drillwell Enterprises Ltd. on July 14, 2005 by filling the entire length of the hole with bentonite clay. A well closure report was forwarded to the Ministry of Environment and the Vancouver Island Health Authority in November 2006.

Well / Name	Well Depth	Wellhead Protection	Treated/Untreated with Chlorine
Arbutus Park #1 (Closed)	86.9 m	n/a	n/a

2.2 Reservoirs

One concrete service reservoir is located at 2976 Link Place, and has a capacity of 568 m³ (125,000 imperial gallons). Groundwater supply to the Arbutus Park Reservoir comes from the Fairwinds wells located nearby.

2.3 Distribution System

The water distribution system in Arbutus Park is comprised of 100mm and 150mm asbestos-concrete watermains, and 150mm, 200mm, and 250mm PVC watermains. Fire hydrants are located throughout the system.

3. 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	RDN (in-house) Laboratory	Total coliforms, E.Coli Temperature, pH, Conductivity Chlorine residual, Salinity Total Dissolved Solids Iron, Manganese
Weekly (Health Dept. Requirement)	North Island Labs	Total, Fecal coliforms
Annual Source Water Testing	North Island Labs	Complete potability testing of each well
Annual System Water Testing	North Island Labs	Complete potability testing of distribution system

4. Water Quality - Source Water and Distribution System

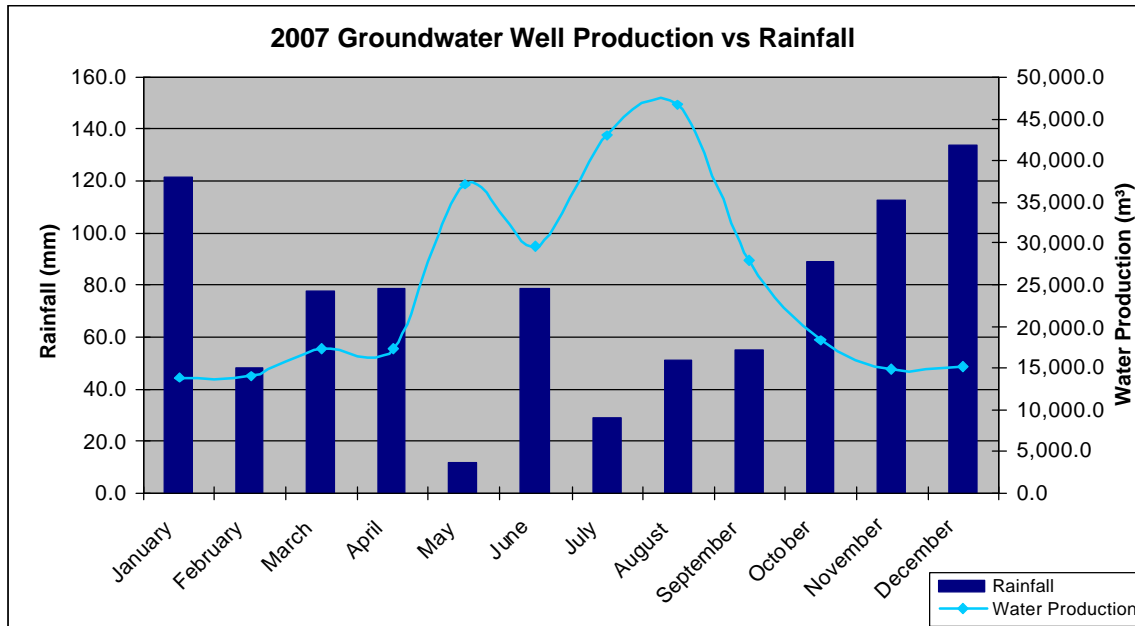
Up-to-date water quality reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca in the WaterSmart section, under “Communities”. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5. Water Quality Inquiries and Complaints

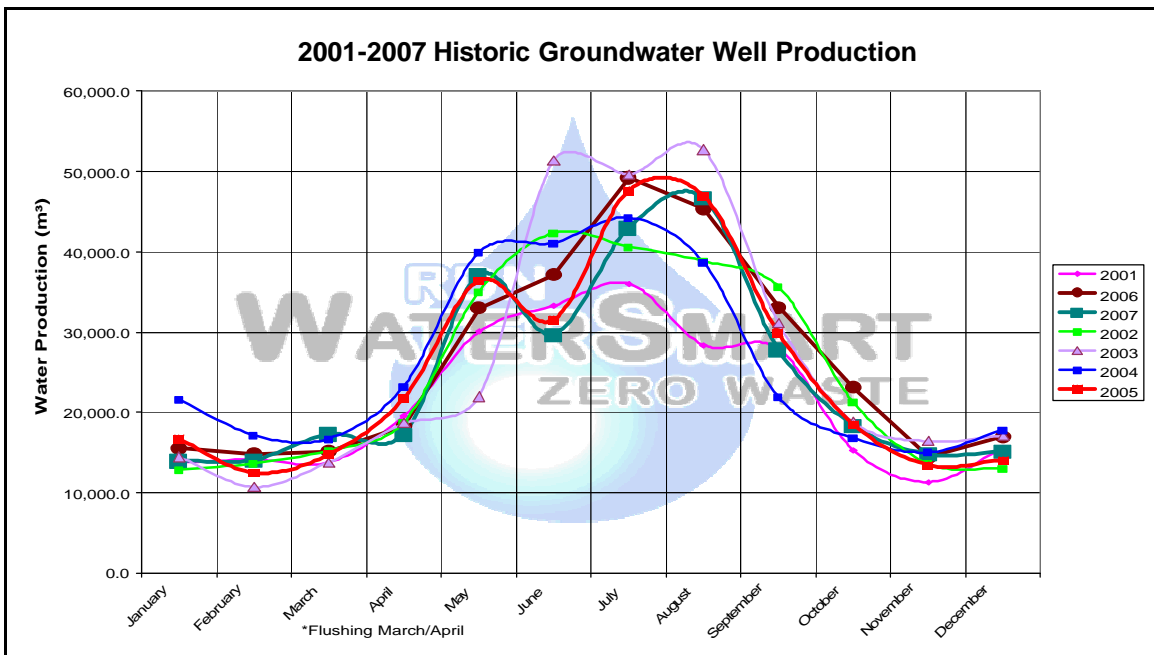
Very few complaints and inquiries were received from the Arbutus Park Water Service Area, and were typically related to objectionable odours in the water.

6. Groundwater Production and Consumption

The 2007 monthly groundwater production for Arbutus Park and the surrounding area is shown in the chart below. The number of Arbutus Park water service connections represents only 131 of 769 total water connections in the surrounding area. Groundwater production has been charted against rainfall data from the City of Parksville website to show how rainfall affects the amount of groundwater pumped.



The monthly groundwater production for Arbutus Park and the surrounding area for the past 7 years is shown in the chart below. Groundwater production in 2007 was typically lower than previous years.



Consumption

In the Fall/Winter of 2007, the average usage per home in Arbutus Park and the surrounding area was 0.52 cubic metres per day (114 imperial gallons). In the summer, the average water usage was 1.2 cubic metres per day (264 imperial gallons).

7. Maintenance Program

Regular maintenance and inspections are completed around the reservoir site to reduce or eliminate the risk of contamination and system failure. Watermains are flushed twice annually; in the Spring and Fall.

8. Water System Projects

8.1 2007 Completed Studies & Projects

- A watermain replacement plan was developed for Arbutus Park.
- A Drinking Water - Watershed Protection Action Plan was completed.
- An Innovative Water Use and Re-Use Study was initiated.
- A Water Use Bylaw - Best Practices Review was initiated.
- A Nanoose Bay Peninsula Water Sourcing Study was initiated.
- A formalized Cross Connection Control Program was initiated.
- A comprehensive water conservation program ([WaterSmart](#)) was carried out from May to October.
- The RDN [WaterSmart](#) website was updated and improved.
- The Emergency Response Plan was reviewed and updated.
- A SCADA (Supervisory Control and Data Acquisition) Study was initiated.
- A pilot treatment plant for iron & manganese removal from drinking water was set-up and run for a two-week trial.
- Watermain flushing was completed in the Spring and Fall.

8.2 2008 Proposed Projects & Upgrades

- Radio Meter Pilot Study (for water meters)
- Well exploration program
- Upgrades to flush-outs
- Install new PRV on Garry Oak Drive
- New signage for all Utilities facilities
- Re-keying all locked facilities
- Implement innovative use and re-use technology
- Stand-alone water testing stations to be installed
- Promote Cross Connection Control awareness and facility audits

8.3 2008 Proposed Studies

- Complete SCADA study and integrate into 2009 budget
- Rainwater management strategy
- Sodium hypochlorite vs. on-site chlorine generation
- Comprehensive capital plan development

9. Emergency Response Plan

The Emergency Response Plan (ERP) was reviewed and updated in 2007. A copy of the ERP is attached in Appendix C.

10. Cross Connection Control

A formalized Cross Connection Control Program was initiated in 2007. Cross connection controls in-place include dual check valves at each service connection, fire hydrant use permits, and water supply bylaws noting discontinued service if a threat to the water supply is perceived by staff.

A consultant who specializes in municipal Cross Connection Control was hired to enhance the RDN Cross Connection Control Program in 2007/2008. The program in 2008 will include:

- A review and comparison of successful cross-connection control programs implemented by other small water systems nearby,
- A survey of existing or potential cross-connection risks for each category of RDN customer (i.e., residential, commercial, industrial, institutional, etc.),
- An audit of RDN-owned facilities in each water service area,
- The preparation of a draft bylaw to allow enforcement of the Cross Connection Control Program,
- The set up of a customer database with a maintenance history of testable backflow prevention assemblies at each facility, and
- Staff training and certification in Backflow Assembly Testing (BCWWA certified).

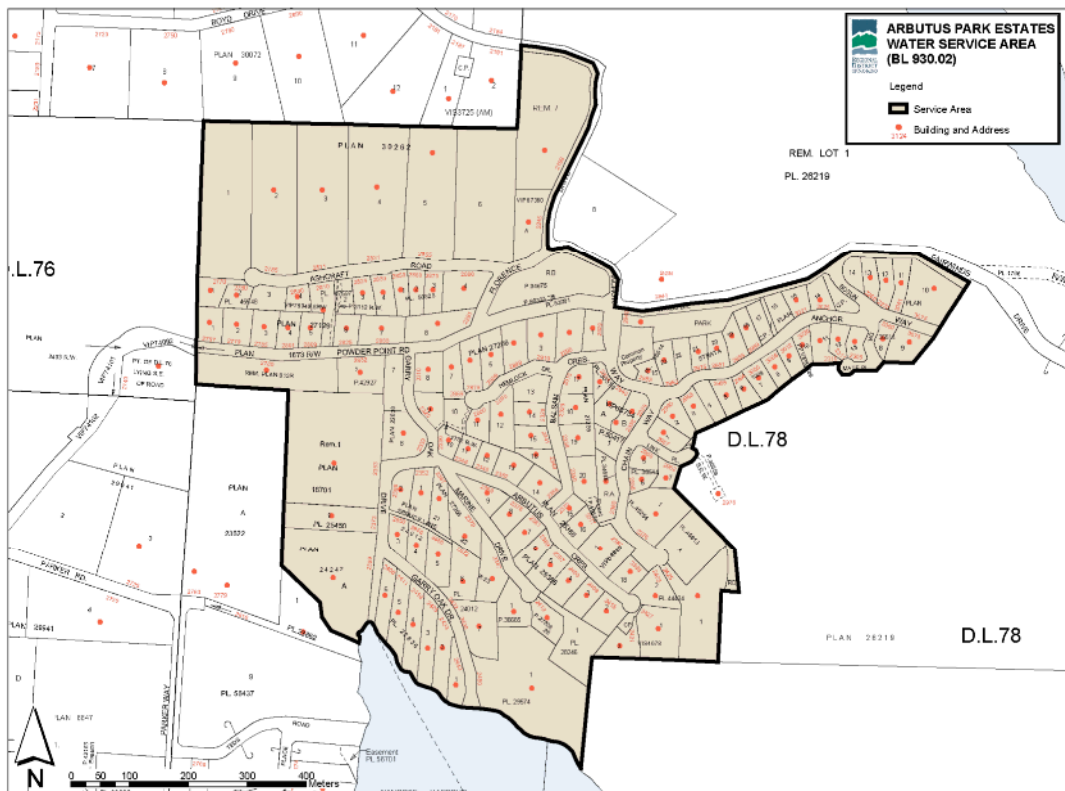
11. Closing

An annual report for the year 2008 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2009. Annual reports are also available on our website at www.rdn.bc.ca in the WaterSmart section, under “Communities”.

APPENIDX A

**MAP OF ARBUTUS PARK
WATER LOCAL SERVICE AREA**

ARBUTUS PARK WATER LOCAL SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

APPENDIX C

EMERGENCY RESPONSE PLAN